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San Francisco HIV Prevention Planning Council

Priority-Setting

1995/1996

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PRIORITY-SETTING FOR BEHAVIOR GROUPS

INTRODUCTION

The intent of the Council's planning effort was to develop a decision-making model for the prioritization of groups at risk for HIV. In Year One of prevention planning, the Council formed several principles for priority-setting. In Year Two of HIV prevention planning, the HPPC's Priority-Setting Committee carried forward these principles as they developed a four-phase process for priority-setting. These principles, described in the Year One Plan, are summarized below:

- There is only one factor for determining which populations need focused prevention efforts: namely, a significant risk of contracting HIV. Risk of contracting HIV is caused by practicing certain identifiable behaviors.

- Since San Francisco has a very high prevalence of AIDS cases (287.5 per 100,000 - the highest of any metropolitan area in the nation), all people in San Francisco who practice behaviors that could lead to the transmission of HIV are at high risk for contracting HIV.

- The efficiency of HIV transmission must be considered for each type of transmission act such as injection drug use, anal receptive intercourse, anal insertive intercourse, vaginal receptive intercourse, fellatio, vaginal to vaginal contact, and cunnilingus.

- Beyond the actual behaviors, co-factors which increase the risk of contracting HIV with a given behavior will be considered. These co-factors are to be used along with the primary factors listed above in determining priority of risk groups.

- The risk of infection will be characterized by the use of behavior groups rather than the traditional 'risk' groups that have been used in the past. The Year One process established the following behavior groups (not in rank order):

Behavior Groups	Abbreviation
Females who have Sex with Females	FSF
Females who have Sex with Females and Inject Drugs	FSF-IDU
Females who have Sex with Males and Females	FSM&F
Females who have Sex with Males and Females and Inject Drugs	FSM&F-IDU
Females who have Sex with Males	FSM

Females who have Sex with Males and Inject Drugs	FSM-IDU
Males who have Sex with Females	MSF
Males who have Sex with Females and Inject Drugs	MSF-IDU
Males who have Sex with Males and Females	MSM&F
Males who have Sex with Males and Females and Inject Drugs	MSM&F-IDU
Males who have Sex with Males	MSM
Males who have Sex with Males and Inject Drugs	MSM-IDU

Members of the Priority-Setting Committee based their decision-making upon this guidance from the Year One process. Essentially, members were interested in a priority-setting model that had a basis in science and made good use of existing data. The crucial elements of the model needed to be frequency of risk behaviors, prevalence of HIV, and presence of co-factors that could increase risk for HIV.

Process for Decision-Making

The Committee met approximately weekly for five months to develop the model for priority-setting. The model was developed through discussion among Committee members. Often, group discussion resulted in consensus to proceed in a specific direction. When consensus was not obvious, issues were decided by majority vote. In most cases, when a vote was taken, the result strongly indicated a specific direction; that is, all but one or two were in agreement. Members were sensitive to each other's opinions, and when an issue arose in which one or two members disagreed with the majority, attention was paid to the minority opinion.

Community input was obtained in a variety of ways. Public comment occurred at the council meetings, and this public comment was considered in the Committee discussions. Providers on the Council brought their experience and their connections to other providers and consumers; these experiences naturally were drawn into the discussions. At one point, members of the transgender community provided extensive comment to the Committee for two weeks, to enable the Committee to fit transgender groups into its model. Initially, these discussions were difficult because the Committee had not established a mechanism to receive public comment outside of the full Council meetings, and the representatives of the transgender community held strong opinions. However, the discussions continued and a satisfactory resolution was reached. This experience enabled the Committee to clarify the methods for public comment at the committee level.

THE DECISIONS

The Priority-Setting Committee established a four phase process for prioritizing groups at risk. A summary of the four phases is presented below, followed by detailed information about each phase. In reading this information, it is important to bear in mind the Council's definition of behavior group and target group: behavior groups are defined according to

behavior, rather than identity. Examples of behavior groups are men who have sex with men, women who have sex with men, and men who have sex with women and inject drugs. Target groups are defined by identity, not necessarily sexual behavior. A target group is defined by the prevention provider who intends to serve it; therefore, the group may be narrowly defined (such as African-American commercial sex workers) or broadly defined (such as injection drug users).

- **Phase I** prioritizes behavior groups using a matrix that contains the estimated average annual frequency of risk activities and an estimated relative risk value for each activity.

- **Phase II** adjusts the Phase I score by including prevalence and population size for each behavior group. Phases I and II form the basic ranking of behavior groups.

- **Phase III** identifies categories of co-factors, provides key examples for each, and describes them and their role in HIV transmission.

- **Phase IV** allows providers submitting applications for funding to apply the information in the Plan to their specific target groups, and requires providers to conduct a needs assessment of the primary risk factors and the co-factors in their target groups.

The development of the four-phase model for priority-setting mediated tensions among Committee members based on different conceptual approaches to prioritization. On the one hand, many saw utility in a numerically-based formula. On the other hand, many wanted to include in the process the complexities inherent in prevention that could not be supported in a formula-based approach. This tension was ameliorated by adopting a model that incorporated both approaches. Part of the model (Phases I and II) categorizes and ranks behavior groups through the use of a formula (described later in this report). Another part of the model (Phase III) takes into account the complexities of the epidemic through the inclusion of a host of factors that increase susceptibility to HIV or present challenges to prevention efforts.

A second area of tension was between behavior and identity — between the general ranking of behavior groups and the specific assessment of target groups' risk. The model for priority-setting bridges this tension by incorporating mechanisms for the general ranking of behavior groups (Phases I and II) and the identification of increased risk among specific target groups (Phase IV). The ranking of behavior groups (Phases I and II) was based on behavior, rather than identity (e.g. self-identified lesbians who have sex with men are ranked on the basis of behavior with both women and men). However, providers are encouraged (in Phase IV) to identify sub-populations most at risk within these behavior groups by examining the frequency of risk behaviors and presence of co-factors.

Each of the phases is described in more detail below.

PHASE I - BEHAVIORS AND RELATIVE RISK

Developing and testing the matrix

Using guidance from the Year One planning process (i.e., risk behaviors and behavior groups), the Committee developed the Phase I matrix. The three components of this matrix are twelve behavior groups, 15 behaviors that corresponded to the routes of HIV transmission, and the relative risk of each behavior.

Committee members tested the matrix as a model for prioritizing behavior groups using "best-guess" estimates. For each cell, members agreed upon and wrote an estimate of the average number of times that behavior group engaged in that act annually. Each cell was multiplied by an estimated relative risk score (indicating the greater or lesser risk of one act when compared to another) for each act, and a total for each row was calculated. There was a range of total scores from 2,000 to over 12,000, indicating that the model differentiated between groups (if the scores had been close this would indicate that the model was not sufficiently sensitive to the differences in behaviors among the groups and would have not been useful). Having passed the test, the model was adopted and information was collected about the average annual frequency of acts for each behavior group and an estimated relative risk score for each act.

Gathering information about frequency of behaviors

Data for the average annual frequencies of each act were gathered from HIV and sexuality literature using 30 sources. Credible sources of information were found for the highest risk acts. It was difficult to find information about sharing unclean sex toys and other blood to blood transmission (including manual-anal sex, tattooing, piercing, and acupuncture with unsterile needles). Fortunately, these acts have a low relative risk score, so even great variations in the frequency have little effect in the final Phase I score. A summary of this information and the methods for estimating average annual frequency is provided in Appendix A.

Estimating relative risk

Not all acts are equally effective in transmitting HIV. Therefore, an estimation of the effectiveness of each act was needed in the model. The Committee debated whether to use infectivity rate or relative risk. Infectivity rate is often defined as the percent chance of becoming infected per episode or per partnership. Relative risk indicates how risky one act is compared to another. Information about relative risk and infectivity rates was collected through a survey of the literature and interviews with over a dozen researchers.

Estimates of both relative risk and infectivity rates are based on uncertain information. A great deal of individual difference in infectivity seems to exist. Also, the probability varies

depending on how infectious the partner is. It appears that people in the early stage of HIV (from infection to some time after antibodies develop) are highly viremic; those in the stage from a few months after infection to just before they become symptomatic are less viremic; viremia increases again in the symptomatic state (but probably does not reach the levels of viremia of the early stage); viremia then decreases sometime after an AIDS-defining condition. The fluctuating viremia makes it difficult to establish a per episode infectivity rate. The issue of viremia fluctuations can be ignored in the HPPC Priority-Setting Phase I model, since the model applies to groups of people, not individuals — within each of the behavior groups, there are people at all stages of viremia.

A second problem in estimating relative risk or infectivity rates is that less is known about the lower-risk acts. Infectivity and relative risk have been studied for needle-sharing, anal receptive sex, and vaginal receptive sex - the acts with the highest risk. It is more difficult to determine the risk of fellatio, since most people in the studies engaged in both intercourse and fellatio. But there is a general agreement among researchers that several of the acts are of low risk (e.g., cunnilingus, vaginal to vaginal contact).

A third issue is that some researchers cite infectivity rates as estimates of the percent chance of becoming infected per partnership, and others cite rates per exposure (act). Estimates per partnership may be more reliable. These estimates come from several good studies of discordant couples; these studies do not examine what acts the couples perform, but track when/if the negative partner seroconverts. The benefit of this approach is that the information may be more reliable; the drawback is that we have not found this information for all the behavior groups - most of the discordant couples studies are among heterosexual couples. Additionally, for many who are targeted with prevention interventions, per relationship infectivity is a poor measure, since 'partnerships' may be overlapping or of very short duration.

After considering information about relative risk and infectivity rates, the Committee selected relative risk per act, since this information was more easily estimated. Relative risk is the riskiness of one act compared to another. Beginning with one act as a baseline, for example receptive vaginal intercourse, relative risk estimates how much more or less risky is another act, such as receptive anal intercourse or cunnilingus. The consultants surveyed the literature and spoke to researchers to obtain estimates of relative risk. These estimates are contained in Appendix B. The Committee discussed the findings and chose relative risk rates as follows:

Act	Relative Risk
Sharing unsterile needles	12
Anal receptive intercourse	9
Vaginal receptive intercourse	3
Vaginal insertive intercourse during menses	2
Anal insertive intercourse	2

Vaginal insertive intercourse	1.5
Giving fellatio	1
Giving cunnilingus during menses	1
Giving cunnilingus	0.5
Other blood to blood transmission	0.5
Getting cunnilingus	0.1
Getting fellatio	0.1
Sharing unclean sex toys	0.1
Vaginal to vaginal contact during menses	0.002
Vaginal to vaginal contact	0.001

The number "3" for vaginal receptive intercourse was chosen arbitrarily as the baseline from which the other behaviors were compared and assigned a risk rate relative to that number. For example, much of the literature on risk estimates indicate that sharing unsterile needles is four times riskier than vaginal receptive intercourse, so its relative risk score is 12.

These components — average annual frequency of risk act for each behavior group and the relative risk of each act — form the Phase I matrix. The matrix is shown at the end of this section and in Appendix A. The top row of the matrix shows the relative risk of each act. Below this are cells (boxes) for each act and behavior group. Some cells are blank because this is not an act practiced by that behavior group – with the exception of certain acts for transgender persons; these exceptions are detailed in Appendix C. The cells that are not blank contain two numbers. The top number represents the estimated average annual frequency of the unprotected act among those in the behavior group. The bottom number represents the product of the average annual frequency multiplied by the relative risk. To the right of the acts is a column of the total Phase I scores, calculated by adding the relative risk/frequency estimates (the bottom number in each cell).

PHASE II - PREVALENCE AND POPULATION SIZE

Phase II modifies the Phase I score to incorporate HIV prevalence and population size. Estimates of prevalence and population size were developed in the Year One San Francisco HIV Prevention Planning process. The Phase II score does not use the actual population size, but rather a number between 1 and 4. Population size is grouped into four categories:

1) 0 - 1,000
2) 1,001 - 10,000
3) 10,001 - 100,000
4) 100,001 and over

The Total score is the product of the Phase I score, the estimated prevalence, and the population size score.

The final presentation of the behavior groups in rank order by the Phase I and II scores takes into account transgender males and females, both pre-operative and post-operative. There is some variation in annual frequency and relative risk between transgender and genetic females and males, but it is not sufficient to change the rank order. These variations are described in Appendix C. Transgender females and males who share unsterile needles to inject hormones are included in the IDU behavior groups, as are any persons who share unsterile needles to inject other substances. Transgender females and males who do not share unsterile needles are included in the non-IDU behavior groups.

Behavior Groups in Rank Order:

1. Males, transgender male-to-female (pre-operative), and transgender female-to-male (post-operative) who have sex with males and inject drugs.
2. Males, transgender male-to-female (pre-operative), and transgender female-to-male (post-operative) who have sex with males and females and inject drugs.
3. Males, transgender male-to-female (pre-operative), and transgender female-to-male (post-operative) who have sex with males.
4. Males, transgender male-to-female (pre-operative), and transgender female-to-male (post-operative) who have sex with males and females.
5. Females, transgender female-to-male (pre-operative), and transgender male-to-female (post-operative) who have sex with males and inject drugs.
6. Males, transgender male-to-female (pre-operative), and transgender female-to-male (post-operative) who have sex with females and inject drugs.
7. Females, transgender female-to-male (pre-operative), and transgender male-to-female (post-operative) who have sex with males and females and inject drugs.
8. Females, transgender female-to-male (pre-operative), and transgender male-to-female (post-operative) who have sex with females and inject drugs.
9. Females, transgender female-to-male (pre-operative), and transgender male-to-female (post-operative) who have sex with males and females.
10. Females, transgender female -to-male(pre-operative), and transgender male-to-female (post-operative) who have sex with males.
11. Males, transgender male-to-female (pre-operative), and transgender female-to-male (post-operative) who have sex with females.
12. Females, transgender female-to-male (pre-operative), and transgender male-to-female (post-operative) who have sex with females.

Using the abbreviations, the priority behavior groups are as follows (FTM= transgender female-to-male; MTF=transgender male-to-female; S=sex; M=male; F= female):

1. M; MTF (pre-op); FTM (post-op) - SM-IDU
2. M; MTF (pre-op); FTM (post-op) - SM&F-IDU
3. M; MTF (pre-op); FTM (post-op) - SM

4. M; MTF (pre-op); FTM (post-op) - SM&F
5. F; FTM (pre-op); MTF (post-op) - SM-IDU
6. M; MTF (pre-op); FTM (post-op) - SF-IDU
7. F; FTM (pre-op); MTF (post-op) - SM&F-IDU
8. F; FTM (pre-op); MTF (post-op) - SF-IDU
9. F; FTM (pre-op): MTF (post-op) - SM&F
10. F; FTM (pre-op); MTF (post-op) - SM
11. M; MTF (pre-op); FTM (post-op) - SF
12. F; FTM (pre-op); MTF (post-op) - SF

PHASE III - CO-FACTORS

Phase III entails the delineation of co-factors — factors that can increase risk for HIV, increase susceptibility to infection, or decrease ability to receive and act upon HIV prevention messages. These factors — biological, economic, psychological, behavioral, access-related, and social/situational — are vital considerations for HIV prevention. Unsafe behavior causes the epidemic, and thus establishes in this plan both the categorization of groups on the basis of their behavior and the focus on frequency of unsafe behavior. However, behavior is inextricably a sociocultural phenomenon. Therefore, adequate prevention planning must take into account not only the unsafe behaviors of target populations, but the social and cultural factors that motivate these behaviors.

While Phases I and II use simple quantitative modeling, Phase III describes conditions that may increase HIV risk. While Phases I and II focus on the actual risk behaviors, Phase III focuses on the conditions that increase the likelihood of engaging in these behaviors. While Phases I and II focus on behavior groups, Phase III focuses on characteristics of target populations. Phase III stands alongside Phases I and II in the Plan to bring into consideration the complex conditions in the lives of people that may increase their risk for HIV.

The priority-setting co-factors with key examples are listed below. It must be stressed that the items listed under each heading are intended as key examples rather than an exhaustive list. Providers, in conducting needs assessments among their target populations, will examine and describe the presence and impact of these and other co-factor issues.

Exhibit 1
Priority-setting Co-factors with key examples *

Biological	**Economic**
• STDs	• financial instability
Psychological	• homelessness
• history of child sexual abuse	**Behavioral**
• history of abusive relationships	• substance use/abuse
• rape	• commercial sex work
• social support	• risky partner
• self-esteem	• multiple sex partners
• mental health stressors	**Social/Situational**
Access-related	• institutionalization
• knowledge of services	• perception of susceptibility
• language	• discrimination
• low literacy	

*** This is not meant to be an exhaustive list of examples**

PHASE IV - PROVIDER-SPECIFIC INFORMATION

Phases I and II provide a basic ranking of the behavior groups, and Phase III describes differences within the behavior groups and the resulting differences in risk behavior. Phase IV enables providers to apply the model to their specific target groups. Many providers identify their target groups, not necessarily by the behavior, but by other characteristics such as sexual orientation, ethnicity, or life situation. Within the general behavior groups there are specific target groups at increased risk. For example, young gay men are at higher risk than the general category of men who have sex with men. Similarly, commercial sex workers are at higher risk than the general category of women who have sex with men. Phase IV allows these distinctions to come across and enables the populations with the highest need for prevention to take precedence over populations at lower risk.

Phase IV occurs during the application process. Providers will be given specific guidance within the request for proposals in order to prepare applications. The intent of the

HPPC is that providers will be expected to conduct a needs assessment that involves the collection of information about the average frequency of risk behaviors and an assessment of the effects of cofactors among their target group. The first year of implementing this HIV Prevention Plan will operate as a transitional year, and providers will be offered technical assistance to increase their skills in needs assessment and evaluation. The Resource Allocation Committee will develop recommendations about the requirements of using Phase IV information during this transition year. Over time, providers will be in a better position to assess and describe more accurately the needs of their target groups - in terms of both the behaviors that place the clients at risk and the co-factors that increase their susceptibility to HIV or operate as barriers to prevention.

San Francisco HIV Prevention Planning Council
Priority-Setting Matrix
1995

	Phase I																				
Relative Risk	12	9	3	2	2	1 5	1	1	0.5	0.5	0 1	0,1	0,1	0,002	0 001						
	Sharing Unsterile Needles	Anal Receptive Intercs	Vaginal Receptive Intercs.	Anal Insertive Intercs.	Vaginal Insertive menses	Vaginal Insertive Intercs.	Giving Fellatio	Giving Cunnlgs. menses	Giving Cunnlgs.	Other Blood to Blood	Getting Fellatio	Getting Cunnlgs.	Sharing unclean sex toys	Vag to Vaginal menses	Vaginal to Vaginal	Total Phase I	Prev.	Pop. Size	Pop. Score	Phase II Total	Rank
MSM-IDU	70 840	24 216		18 36			30 30			24 12	30 3		35 3,5			1141	64,71%	2,250	2	1,476 04	1
MSM/F-IDU	75 900	7 63		18 36	3 6	21 31 5	13 13	3 3	20 10	7 3.5	18 1,8		22 2,2			1070	48,53%	750	1	519 27	2
MSM		21 189		21 42			9 9			21 10,5	37 3,7		35 3 5			258	14 99%	41,250	3	347,82	3
MSM/F		21 189		21 42	3 6	21 31,5	9 9	3 3	20 10	21 10 5	37 3,7		22 2 2			307	33 45%	13,750	3	307,97	4
FSM-IDU	40 480	6 54	77 231				48 48			6 3		35 3 5	15 1 5			821	12,15%	3,300	2	199 50	5
MSF-IDU	38 456			6 12	12 24	82 123		6 6	41 20.5	2 1	42 4 2		22 2 2			649	13,96%	8,500	2	181,17	6
FSF/M-IDU	40 480	10 90	50 150				26 26	16 16	100 50	14 7		100 10	64 6 4	16 0 03	100 0.1	836	12 00%	625	1	100 26	7
FSF-IDU	40 480							14 14	94 47	12 6		94 9 4	124 12 4	14 0.03	94 0.094	569	4 35%	575	1	24.75	8
FSF/M		9 81	46 138				24 24	16 16	100 50	14 7		100 10	64 6.4	16 0,03	100 0.1	333	0.61%	15,750	3	6.09	9
FSM		6 54	62 186				33 33			6 3		37 3,7	15 1.5			281	0.19%	285,049	4	2 14	10
MSF				8 18	10 20	66 99		6 6	41 20,5	2 1	43 4 3		15 1,5			168	0.09%	252,544	4	0.61	11
FSF								14 14	94 47	12 6		94 9 4	124 12 4	14 0 03	94 0 094	89	0.08%	14,550	3	0 21	12

CO-FACTORS

INTRODUCTION

This section contains detailed discussion of twenty co-factors. A co-factor is a condition that can increase risk for HIV, increase susceptibility to infection, or decrease ability to receive and act upon HIV prevention messages. These factors, along with primary risks such as sharing unsterile needles and having unprotected sex, are critical considerations in HIV prevention planning and implementation. As Ralph DiClemente (1992) states,

> "While HIV is the etiologic virus associated with disease, and while it is a necessary factor in disease pathogenesis, it is not, in and of itself, sufficient to drive the epidemic. People's behavior - more specifically, the lack of appropriate HIV-preventive behavior - propels the epidemic. Moreover, precisely because HIV links sexuality with disease, it is inextricably a sociocultural as well as biological phenomenon. Therefore, to understand the HIV/AIDS epidemic and the behaviors that result in infection, we must ultimately confront it as much in psychosocial and cultural terms as in biomedical terms."

To say that a co-factor is a condition that can increase risk for HIV or increase susceptibility to infection, is in fact to talk about two different things. In the first case, the co-factor is a motivator for risk behavior which may result in HIV infection. Examples may include low self-esteem, lack of social support, depression, commercial sex work, and low perception of risk. In the latter case, the co-factor does not so much influence behavior, but rather increases the likelihood that one would contract HIV if exposed to the virus. For example, the presence of an STD, malnutrition (often concomitant with poverty) and the immune-suppressive effects of drugs may increase the likelihood of infection, given exposure to HIV. The two diagrams below represent these two concepts:

Co-factor as motivator for behavior:

Co-factor → Risk behavior → HIV infection

Co-factor as an increase in susceptibility:

Risk behavior → HIV infection ← Co-factor

The presence of a co-factor is not a singular event — multiple co-factors may be at play within an individual. In fact, often clusters of co-factors are present, such as poverty,

discrimination, substance use, and STDs. Because these co-factors are usually present in clusters, the ability to discern the contribution of a single co-factor to HIV risk or infection is limited. Several studies have examined clusters of co-factors (namely, depression, self-esteem, and lack of social support) and have used statistical methods such as multiple regression to distinguish the contribution of each. But there has been no study that includes measures of the entire set of co-factors with statistical techniques to assign the weight of one factor over another. In fact, such a study is difficult to imagine, because people are extremely complex beings with a great number of motivations. However, there have been studies that have teased out the connection between one or more co-factors and HIV risk. In recent years, the methods used in these studies have improved the representation of people of color and women, and many of them are conducted with participants in San Francisco. So, while there are no definitive answers about the precise contribution of one or another co-factor to HIV risk, there are insights provided by numerous studies which have examined the role that these co-factors play in the epidemic.

In writing this section, the use of research language has been kept to a minimum (the citations to the original sources have been provided for those interested). However, a few of the concepts that are important to the discussion of the link between a cofactor and HIV may need further explanation. The following paragraphs will define each of the concepts.

The word *association* has been used to describe the link between a factor and HIV risk. Association implies that if one factor is affected, it is possible that the other factor will also be affected. For example, if there is a positive association between substance use and HIV infection, people who use substances will be more likely to be infected with HIV than people who do not. The table below describes a positive association between substance use and HIV infection across a group of people (the table contains fictitious data). The table indicates that the majority of the people who use substances are also HIV-positive. Whereas, more of the people who do not use substances are HIV-negative. If an association did not exist between substance use and HIV infection, it would be expected that the distribution of users and non-users would be more evenly distributed across the categories of HIV infection.

	HIV-positive	HIV-negative
Uses substance	350	50
No sub. use	150	450

An association may be positive or negative, however these terms do not mean that the association is either "good" or "bad." While the association in the previous paragraph was positive, an increase of HIV infection among those who use substances is not good. In contrast an example of a negative association may be that people who have knowledge of HIV information may be less likely to be HIV-positive. While the association is negative, a reduction in HIV infection is good.

Common measures of association are Chi Square, analysis of variance, Pearson's Correlation, and odds ratio. Chi Square measures the association between two discrete factors (discrete means that the factors have a limited number of options (i.e., "yes" or "no," "male" or "female")). Analysis of variance measures the association between discrete factors and continuous factors (continuous means that the factors have an unlimited number of options (i.e., age, education, income)). Pearson's correlation measures the association between two continuous factors.

An odds ratio indicates the intensity of an association and is expressed in terms of a ratio (1:1) (i.e., what is the chance that one situation will happen compared to another). For example, in the relationship between type of sexual contact (same sex or heterosexual) and sexual activity among women, Bevier, et al. (1995) found that women reporting same sex contact were 4.1 times as likely to have 3 or more sexual partners than women reporting heterosexual contact. Thus the ratio is expressed as 4.1:1; however, in a research article the first number is expressed and the other is assumed.

A second way to describe the link between two factors is in terms of a *causal* relationship, meaning that the existence of one factor brings about the existence of another (i.e., cause and effect). For example, when firing a gun, the explosion of gunpowder causes the bullet to leave the muzzle of the gun. In comparison, a causal relationship is stronger than that of an association. An association means that when one factor is present it is possible that the other factor will be present, such as the association between substance use and HIV infection. Whereas, a causal relationship means that whenever the cause is present the effect will most likely occur. In HIV research it is difficult to assess causality in its purest sense because a factor, such as unprotected sex, does not always cause HIV infection.

Three rules have been used to determine causality, the first is that the cause must happen before the effect. The second is that a change in the cause must bring about the change in the effect. And the third is that a relationship must not be able to be explained by another factor which influences both the cause and the effect. For example, there is an association between ice cream and deaths from drowning; as ice cream sales increase, deaths from drowning increase (Babbie, 1995). A third factor which could explain the association is temperature; as the temperature increases, more people go swimming which increases the chances of deaths due to drowning and at the same time more people buy ice cream. However, there is not a direct link between deaths from drowning and ice cream sales. The third factor is described as a confounding factor.

Confounding factors are often present in research studies and provide a more accurate description of the problem being studied, yet these factors are often difficult to detect. For example, in some studies it may appear that there is an association between substance use and risk behaviors. However, if the data is sorted by age, it may be discovered that younger men are more likely than older men to engage in both substance use and risky behavior. Thus, in this example, age is a better predictor of risk behavior than substance use.

Predict is another term that is used in the discussion of cofactors. Predict is not used as the ability to see into the future and know how something will turn out (such as whether a person will become infected). Rather, it is a statistical term which indicates how strongly one factor is associated with another factor. For example, if it is stated that in a sample of people, a history of an STD predicts HIV infection, it means that in statistical analysis there is a stronger association between having had an STD and HIV infection compared to the associations between any other factor and HIV infection.

Statistical significance refers to the probability that an association between factors found in a sample of people accurately represents the association in the larger population from which the sample was taken. It is based on a probability of 100% and expressed in terms of the probability that the association is due to random chance or sampling error. Thus if the probability is less than 5% that an association, found in a sample, occurs in a population due to some form or error, the association is said to be statistically significant.

Finally, *cohort* refers to a group of people that are being observed, usually over a period of time. Examples of cohorts are a graduating class, a group of diabetics, a town population, or a group of gay men. In cohort studies, it must be remembered that all members in the group age over time, so that any changes observed may be due to aging rather than any interventions received.

The use of terms African-American and Black or Hispanic and Latino are used in this section according to the terminology of the articles discussed.

It must be stressed that the set of co-factors described in this section is not exhaustive. There are many more factors that increase risk among those in specific target groups, and providers conducting needs assessments should examine the presence of these.

For each co-factor, the following questions are addressed:

- How strong is the connection between that co-factor and HIV risk?
- How does that co-factor increase risk?
- Who has that co-factor?

BIOLOGICAL CO-FACTORS

Biological co-factors include STDs, although poverty and substance use also have components that can be considered as biological co-factors.

SEXUALLY TRANSMITTED DISEASES (STDs)

Much of what we know about the connection between STDs and HIV comes from 1) studies of discordant couples in the U.S., Europe, and Italy; 2) studies of prostitutes in Africa (particularly Nairobi, Kenya), and 3) studies of persons in U.S. criminal justice systems.

What Is the Connection Between STDs and HIV?

There are two connections between STDs and HIV; a behavioral link and a biological one. The behavioral link may show a connection between a previous STD episode and current prevention behaviors such as condom use. A diagnosis of and treatment for an STD could include counseling about safer sex and act as a wake-up call to use condoms more frequently. In this way, a prior STD could indicate a high level of current prevention behaviors. On the other hand, a prior or current STD could indicate a low level of condom use, and thus a higher risk for HIV.

The biological link between STDs and HIV shows increased HIV risk among people with an STD. For example, people with ulcerative STDs are more susceptible to contracting HIV if exposed to HIV than those without an STD. Following are discussions of both behavioral and biological links.

The Behavior Link

The body of research examined offered mixed findings about the connection between a prior diagnosis of an STD and current sexual behavior. While some studies have found a definitive link between regular condom use and a history of an STD, others suggest a weak link between preventive sexual practices and a prior STD diagnosis. In a large sample of inner-city clinics, researchers found regular condom use to be associated with both a past and current diagnosis of STDs (Senie, 1991 cited in O'Campo et al., 1992). Other studies have found no link between an STD history and condom use or STD-prevention methods. For example, Fullilove et al. (1990a) in a study of Black Bay Area adolescents who use crack cocaine, found that adolescents who had an STD history were no more likely to have used a condom in their last sexual encounter than were those with no STD history. "There is no evidence, in other words, that a previous STD episode has resulted in greater efforts to prevent further exposure." Additionally, O'Campo and colleagues' (1992) study of low-income, urban pregnant women found that there was a very weak relationship between STD history and current protective behavior.

Additionally, Brooks (1987) found that repeated episodes of STDs and a failure to practice STD prevention methods "may reflect an enduring set of high-risk behaviors" (O'Campo et al., 1992). Pepin et al. (1989) found that having had a previous episode of an STD is associated with a higher risk of subsequent HIV infection, probably due to a continuation of high-risk sexual behaviors. Although routine patient education about STD

prevention is called for, "it is questionable whether this standard is being met" (O'Campo et al., 1992).

The lack of STD-prevention behavior may be due to a low perception of STD risk. For example, in a study of low-income, urban, pregnant women at Johns Hopkins Hospital, the researchers found that although 40% of the women had at least one STD, almost all (95%) perceived themselves to be at somewhat low or very low risk for getting an STD during the next year – even though only 19% reported consistently using adequate methods of STD/HIV prevention. Further, the women generally believed that the risk of HIV infection was increased a little (but not much) with a history of an STD (O'Campo et al., 1992).

The Biological Link

The biological link between STDs and HIV infection is generally a strong one. Several large studies in Europe, Africa, and the U.S. found that a history of an STD, particularly the presence of genital ulcers, increases the risk of HIV transmission (DeGruttola, 1989; Kennedy, 1993; Plummer, 1991). Interestingly, Padian's 1987 study of women sexual partners of HIV positive men did not find this connection. Instead, the results indicate that the number of episodes of STDs were similar among all women, regardless of their partners' HIV status. In fact, HIV seronegative women actually had more STDs (and more sexual partners) than seropositive women, although the finding was not statistically significant (Padian, 1987).[1]

Mayer and Johnson (1995) point to multiple African reports that have established that "even when the number of sexual partners and other parameters of sexual behavior are controlled for in analysis, there is a higher HIV seroprevalence among subjects with genital ulcer disease." In a study of prostitutes in Nairobi, researchers found that genital ulcers appeared to be a major risk factor for HIV acquisition (Plummer, 1991). Further, the researchers found that the women who experienced frequent ulcer episodes (caused by an STD) were more likely to seroconvert than those who experienced less frequent episodes. Women with a rate of ulcers of more than one episode per year were at much higher risk of HIV infection. Among women who regularly used condoms, the presence of genital ulcer disease did not increase risk for HIV (Plummer, 1991).

While genital ulcers appear to increase risk (unless condoms are used), consensus is not established for other STDs. In fact, there has been a paucity of studies of common non-ulcerative STDs (e.g., chlamydia and gonorrhea) as risk factors for HIV seroconversion among high-risk US heterosexuals. In a Florida study of women convicted of sex-related

[1] Several studies, including Padian's (1987) and Plummer's (1991) indicate that anal intercourse between women and men can also account for part of the variation between women who contract HIV and those that do not. African studies also posit that female to male transmission may be increased by an intact foreskin, genital ulcers or the presence of blood during intercourse (Kennedy, 1993).

crimes, a higher percentage of those who were HIV positive on their first HIV test had syphilis than those who were HIV negative; however, gonorrhea infection rates were similar between the two groups (Onorato, 1995). Of Dade County convicted prostitutes who had repeated contacts with the criminal justice system and therefore repeated HIV tests, a higher percent of those that seroconverted since their first HIV test had a new syphilis episode (56%) compared to those that did not seroconvert (28%). The higher STD rate among those seroconverting held true for gonorrhea, as well – 46% of those seroconverting had a new gonorrhea infection compared to 19% of those who did not seroconvert. This study indicates that syphilis, and to a lesser degree gonorrhea, may play an important role in seroconversion (Onorato, 1995).

Mayer and Anderson report that significant associations between syphilis and HIV have been found in the majority of studies; however, the association between HIV risk and genital herpes simplex virus (HSV-2) is inconclusive. Those with a long-standing HSV-2 infection may be at more risk due to the specific time when ulcerative lesions are present on the genitals. These genital sores enable HIV to pass into the body more efficiently (Mayers and Anderson, 1995). Anogenital warts have also been associated with HIV infection (Mayers and Anderson, 1995), as has C. Trachomatis infection (Plummer, 1991). In a study of urban African sex workers, chlamydia was found to be associated with HIV seroconversion, while gonorrhea was not clearly associated (Mayers and Anderson, 1995).

Several studies connected syphilis, gonorrhea, and other STDs with HIV, but could not make explicit whether that connection was behaviorally based or biologically based. In other words, if groups who seroconvert have higher rates of STDs, we often cannot know whether this is because they are engaging more frequently in higher risk acts than those who do not seroconvert or whether it is because an STD infection makes them more susceptible. Certainly, those with a history of one or more STDs are at increased risk for HIV if they do not change their risky behaviors. These findings indicate the need for a cross-over between HIV and STD prevention messages – the need for both HIV and STD prevention providers to educate and counsel clients about both STDs and HIV prevention. Finally, there is a need for HIV prevention providers to make special efforts to identify and reach those among their target population who have prior or current STDs.

How Do STDs Increase HIV Risk?

Since we assert that STDs are a generally biological co-factor, the explanation of how they increase risk is medically oriented. (For a medically-oriented description, please see Mayers and Anderson, 1995.) Ulcerative genital diseases, both in men and in women, increase HIV risk by causing mucosal discontinuity in the genitalia. These sores allow HIV-cells to enter (and leave) the body directly. In men, "the opportunity for HIV-1 infection is significantly increased if lesions, microabrasions, or inflammation are present on the penis or within the penile urethra because the virus could then bypass the epithelial barriers to infect cells in the connective tissue and blood and lymphatic vessels" (Mayers and Anderson, 1995). In women, "genital ulcers can increase the number of HIV-susceptible cells in the female

genital tract mucosa. C. trachomatis operates in much the same way as genital ulcer disease: a trachomatic infection produces an intense subepithelial mononuclear cell inflammatory response in the cervix as well as microulcerations" (Plummer, 1991).

Nonulcerative STDs, such as chlamydia, can cause inflammation in women. The inflammation can cause genital erosion which makes HIV negative women more likely to contract HIV through intercourse. HIV infected women with genital inflammation may be more likely to shed virus cells into their cervical/vaginal secretions, and thus may more easily infect men (Mayers and Anderson, 1995). The physical makeup of male genitals, especially for uncircumcised men, may also be a means for HIV infection. The foreskin and urethra are potential sites of HIV entry, following intercourse with an HIV infected person. The Langerhans cells, which live in the foreskin of an uncircumcised man's penis, can provide a defense function, but can also serve as host cells for HIV. The same is true of the penile urethra; the lymphocytes, macrophages and Langerhans cells in the urethra can also provide targets for HIV infection. (Mayers and Anderson, 1995).

Who has STDs?

STDs are found more often among young people, age 19 and under. DiClemente points out that the rates of STDs drop exponentially past age 19. For women 10 to 14 years and 15 to 19 years, the rate of gonorrhea is about the same - 3,500 per 100,000 sexually active women (DiClemente). Rates of STD infections appear to be high among transgender commercial sex workers, more so than among biologically female sex workers, although studies of this issue are scarce. For example, in a study of 235 male-to-female transgender prostitutes in Atlanta, 25% showed evidence of past infection with syphilis (McKeganey, 1994).

Exhibit 2
Estimates of Risk for Current HIV Infection for City Clinic Patients Who Had a Current Gonorrhea or Syphilis Diagnosis (1990-1995)

	Gonorrhea (OR)	Early Syphilis (OR)
Women who have...		
Sex with men	3.17	2.87
Sex with men - IDU	2.86	1.45
Men who have...		
Sex with men	1.51	1.56
Sex with men - IDU	1.31	1.50
Sex with women	1.60	2.47
Sex with women - IDU	2.04	2.26

Source: City Clinic

Exhibits 2 through 9 display information about STDs in San Francisco. These exhibits consistently portray high STD rates among African Americans and Native Americans and among young persons. Data by ethnicity and age (not displayed) consistently show the highest rates of gonorrhea rates among teenage Black women. Exhibit 2 shows that women have higher odds of gonorrhea infections – even higher than injection drug using men.

Exhibits 3, 4, and 5 show STD rates by ethnicity over time. Please note the different scales to the left of each graph - gonorrhea rates are up to 3,500 per 100,000, while syphilis rates are less than 600 per 100,000. Exhibit 3 shows that by far the highest rates of gonorrhea have been among Blacks, and that rates are declining in most groups. Among Native Americans, however, rates are increasing. Syphilis rates have declined among Blacks, and more recently among Native Americans, and have remained low among Asians, Whites, and Latinos. Exhibit 5 shows that Chlamydia rates are particularly high among Blacks, and also high among Native Americans and Latinos.

Exhibits 6 through 9 show gonorrhea and syphilis rates for females and males by age. These Exhibits show marked drops in the rates over time, yet rates among young women continue to be high compared to women out of their teens. Compared to 1989 when teenage men had higher rates than older men, by 1993, the higher rates were among men in their twenties. While rates have declined markedly since 1990, the general pattern of distribution holds. Exhibit 9 shows that, among men, syphilis rates in 1990 were highest among those in their early 30s. While the rates have dropped, the pattern of age distribution has shifted to older males.

Exhibit 3
Gonorrhea Rates by Ethnicity: 1989 - 1993
(Cases per 100,000)

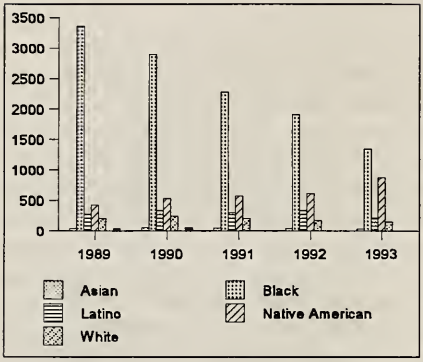


Exhibit 4
Early Syphilis Rates by Ethnicity: 1989 - 1993
(Cases per 100,000)

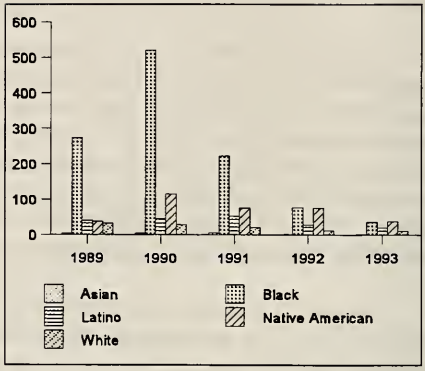
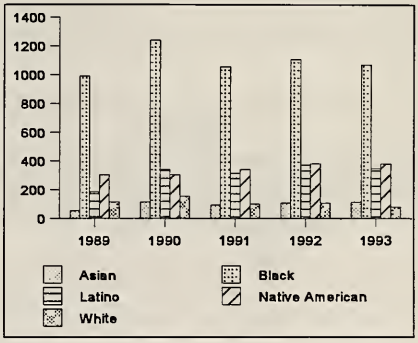


Exhibit 5
Chlamydia Rates by Ethnicity: 1990-1994
(Cases per 100,000)



Source: San Francisco STD Morbidity Data

Exhibit 6
Gonorrhea Rates Among Females by Age: 1989 and 1993
(Cases per 100,000)

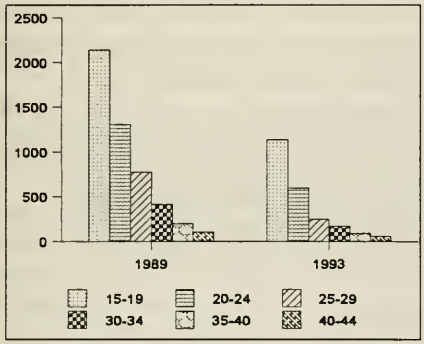


Exhibit 7
Gonorrhea Rates Among Males by Age: 1989 and 1993
(Cases per 100,000)

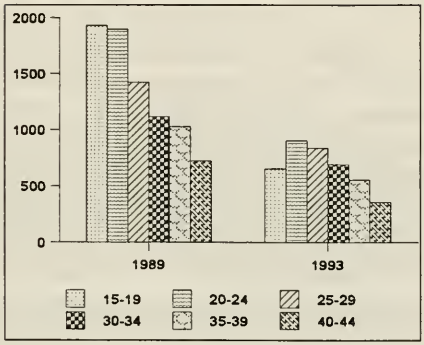


Exhibit 8
Early Syphilis Rates Among Females by Age: 1990 and 1994
(Cases per 100,000)

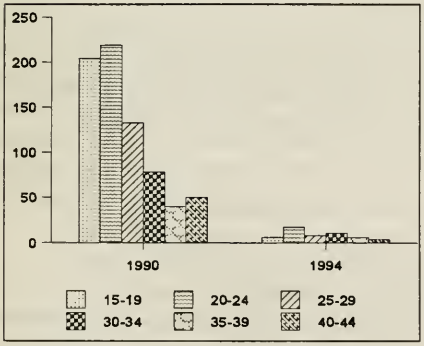
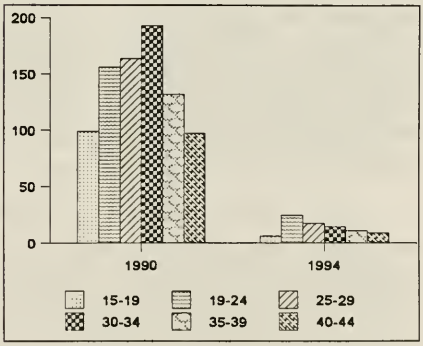


Exhibit 9
Early syphilis Rates Among Males by Age: 1990 and 1994
(Cases per 100,000)



Source: San Francisco STD Morbidity Data

ECONOMIC CO-FACTORS

The economic co-factor category includes poverty and its more extreme condition, homelessness.

POVERTY

Studies of the relationship between socioeconomic status and HIV risk primarily focus on those living in impoverished conditions. Poverty is most commonly defined in terms of income, i.e., the 1990 national census defined those living in poverty as a family of four with an annual income of less than $12,674. "Impoverished conditions" may refer to employment status (e.g., unemployed or under-employed people), sources of income such as living on disability (SSI) or other financial assistance, low educational attainment, and substandard housing. This section discusses the link between poverty and HIV risk; the next section focuses on the more extreme condition of homelessness and its relation to HIV risk.

What is the Connection Between Poverty and HIV Risk?

Low socioeconomic status is one of the most consistent determinants of poor health status. Impoverished individuals experience greater incidence and mortality rates for most major chronic diseases and infections (Haan et al., 1987; Syme et al., 1976), including HIV infection (Krueger et al., 1990). Studies that have considered poverty independent of individual behaviors have found a relationship between poverty and an increased likelihood of premature mortality. Haan et al. (1987) analyzed extensive data from an Alameda County study and found that residence in a federally defined poverty area is associated with increased risk of death. They adjusted their analysis to control for the effects of other important risk factors such as smoking, medical care access, and baseline physical health status. These authors propose that poverty area residents' exposure to higher crime rates, poorer housing, lack of transportation, and higher levels of environmental contaminants may explain this association.

Risk of HIV infection is no exception to the list of health hazards that poor people experience disproportionately, as compared with people of higher socioeconomic status. Researchers have explored many possible explanations for this phenomenon and have considered individual behaviors, access to health services, and social and physical environments as potential reasons. Each of these provide at least a partial understanding of why people of low socioeconomic status are at increased risk for HIV infection.

In an important study of 2,766 male county clinic clients in Seattle, Krueger et al. (1990) found that people below the federal poverty line were more likely to be HIV infected. This association remained statistically significant even after the researchers factored into their analysis other issues, such as race and specific risk behavior. The authors report that this

important finding is the first of its kind linking income to HIV seropositivity independent of race.

In addition to the evidence that poverty may increase the likelihood of HIV infection directly, there is substantial data indicating that behaviors and conditions associated with poverty increase risk for HIV infection. For example, low income individuals in the above mentioned study were more than twice as likely to inject drugs than people above the designated poverty line. Of the injection drug users (IDUs) in this study who shared needles to inject drugs, 73% were impoverished (Krueger et al., 1990).

Many poor people may cope with the stress of financial instability by engaging in behaviors (such as substance use and commercial sex work) which are known to increase HIV risk. In a sample of 250 low income individuals accessing services at a clinic in Los Angeles County, Linn et al. (1990) found high levels of substance use comparable to rates reported for homeless populations: approximately half of the low income individuals reported drinking alcohol several times a week or more often and 34% had used at least one other substance. Marijuana and crack cocaine (31% and 13% of the low income individuals using, respectively) were the most frequently used drugs and another 8% injected the drugs they used.

Commercial sex work may often seem the best subsistence option for impoverished people, particularly women whose access to employment may be restricted. As Shayne and Kaplan (1991) explain, "safe sex is an economic compromise" when a paying sex partner offers more goods for unprotected sex. People involved in commercial sex work also have multiple partners, increasing exposure for potential HIV infection.

A national survey of the general adult population (Anderson and Dahlberg, 1992) and the San Francisco-based AIDS in Multi-Ethnic Neighborhoods (AMEN) study (Peterson et al., 1992) both report that people with low income were more likely than people of higher income to have multiple sex partners. Similarly, Catania et al. (1992) reported that, of their national sample of 10,630 heterosexual adults, low income individuals were more likely than those in other socioeconomic strata to have a risky partner, i.e., a partner who is HIV-positive, used substances intravenously in the past five years, or has multiple partners.

Barriers to HIV prevention imposed by living in impoverished conditions increase HIV risk for the poor. The poor may deny their level of HIV risk to reduce the anxiety that would be created by a "more realistic assessment of vulnerability" (Shayne and Kaplan, 1991). Low perception of HIV risk has been associated with increased likelihood of involvement in risky sex and drug use behaviors (Petosa and Jackson, 1991). Similarly, Mays and Cochran (1988) explain that poor women often prioritize more immediate survival needs, such as finding sufficient food and shelter, over issues that have longer-term implications, such as HIV infection. If HIV prevention is a low priority, it is unlikely that people will change the behaviors necessary to prevent infection.

Many of the effects of living in poverty discussed here (e.g., substance use, commercial sex work, multiple sexual partners) are detailed in other sections. While these behaviors and conditions provide a context for understanding why poor people are at increased risk for HIV infection, recent findings caution a focus on individual factors such as behavior and access to services (Haan et al., 1987). Explanations for the poor's increased risk for HIV that only consider the individual level scapegoat those people who are experiencing the *effects* of poverty and ignore the larger social and political responsibility to address its root *causes*.

How Does Poverty Increase HIV Risk?

Poor nutrition that often accompanies poverty (Gelberg and Linn, 1988) may increase one's susceptibility to HIV infection. For example, women whose health is compromised due to poor nutrition may have weakened vaginal walls that are more susceptible to bleeding. Broken or irritated vaginal tissue increases the likelihood that semen to blood transmission of HIV will occur during intercourse with an HIV infected partner (San Francisco HIV Prevention Plan, 1995).

Other ways in which poverty increases HIV risk were previously mentioned and are discussed in greater detail in other sections. A summary of these points includes:

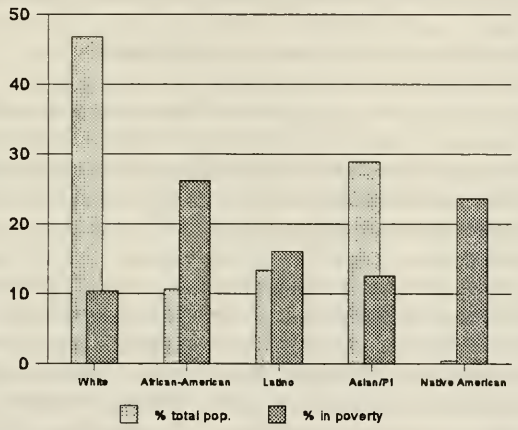
- Higher rates of injection drug use among the poor, as compared with people of higher socioeconomic status, increases the likelihood of blood transmission through needle-sharing.
- Multiple sexual partners increase the likelihood of exposure to an HIV-infected person, and thus increase the risk of the virus being transmitted sexually.
- Impoverished people who engage in commercial sex work as a subsistence pattern have a greater number of sexual partners than those who do not exchange sex for goods. Commercial sex workers also tend to have sexual partners who are themselves at greater risk for HIV.
- Low perception of risk for HIV among the poor and prioritizing immediate survival needs over long-term health issues decrease the likelihood that poor individuals will take HIV protective measures in general.

Who Is Poor?

According to 1990 census data, 12.7% of all San Franciscans live under the federally designated poverty line. Children under 6 years old in San Francisco are disproportionately represented among the poor; 17.7% of this group live in poverty. Exhibit 10 shows that according to 1990 U.S. census data, people of color are disproportionately represented among San Francisco residents living in poverty.

Although African-Americans account for only 11% of the total San Francisco population, 26% of African-American residents live in poverty. Similarly, 13% of the total San Francisco population is Latino yet 16% of Latinos are poor. And 0.4% of the total San Francisco population is Native American, yet 24% of Native Americans are poor.

Exhibit 10
Comparison of Race Representation (%) for S.F. Population and Residents Living in Poverty



Women in San Francisco are slightly more likely than men to be below the poverty line. According to U.S. census data for San Francisco, 13% of San Francisco women live in poverty, as compared to 12% of San Francisco men. The combination of factors that affect socioeconomic status such as race/ethnicity and gender would show that women of color are even more disproportionately poor than both men in general and people of color in general.

HOMELESSNESS

San Francisco's homeless population is a broadly heterogeneous group. This diversity is explained largely by the various circumstances that are often referred to under the rubric of homelessness — the demographic diversity of the population, and the range of reasons for becoming homeless. There are also varying degrees of homelessness, the most severe of which necessitates living on the streets, in abandoned buildings, in shelters, or any space not

designated for shelter (e.g., cars). A less severe although unstable condition refers to those temporarily staying with friends or family, in single room occupancy hotels, in a room or apartment but without financial stability to continue paying for housing, and/or without a permanent address.

Homelessness is a more extreme form of poverty and therefore many of the associated risks previously discussed apply. However, economics is only one of many factors that may lead to homelessness. Domestic violence and child abuse, youth runaway behavior, substance use, physical and mental disabilities, and unexpected crises may also result in homelessness (Crawford et al., 1993; Kennedy, 1991). This section discusses the link between homelessness and HIV risk. Issues that all homeless people face will be presented generally and the different experiences and issues that homeless women and youth face will be highlighted.

What Is the Connection Between Homelessness and HIV Risk?

Very few formal studies of the extent to which homelessness increases risk for HIV have been conducted. However, many studies consider the risk behaviors of the population and make associations based on these data. These studies, combined with HIV seroprevalence rates for homeless populations and extrapolation from the data on poverty and HIV risk, suggest that homelessness is a powerful cofactor for HIV infection.

HIV seroprevalence data for homeless populations is almost entirely from small samples of subpopulations accessing shelter or community clinic services. Therefore, there is little reliable seroprevalence data that can be used to make general statements about the extent of HIV infection among homeless populations. Nonetheless, estimates provided to date are consistently higher -- possibly by as much as two times (Fetter and Larson, 1990) -- for homeless people than for their domiciled counterparts. Some of these estimates, as presented in Tynes et al. (1993), are:

- Among homeless men using a New York shelter, 45% tested HIV-positive during a routine health examination.
- 21% of 162 patients anonymously tested at a medical clinic for the homeless were HIV-positive.
- Approximately 10% to 14% of the homeless accessing services at a clinic in Miami tested HIV-positive.
- Among a large sample of 2,667 homeless and runaway youth, 5.3% were seropositive for HIV antibodies.
- 8% of the homeless and runaway youth accessing services at a medical clinic in San Francisco tested HIV-positive.

As mentioned in a previous section, Krueger et al. (1990) found that people below the federal poverty line were more likely to be HIV infected even after controlling for other issues such as race and specific risk behavior. Also, Haan et al. (1987) found that residence in a

federally defined poverty area is associated with increased risk of death. These findings are likely applicable to homeless populations, given that homelessness is an impoverished condition. Coupling this interference with the seroprevalence estimates provided above, homeless populations appear to be disproportionately represented in the distribution of HIV infection.

Behaviors and circumstances associated with homelessness further contribute to homeless populations' risk for HIV. Injection drug use appears to be more common among homeless populations than in the general population. St. Lawrence and Brasfield (1995) found that 20% of 94 homeless men and women in Jackson, Mississippi injected drugs and shared needles. In their sample of 250 domiciled yet impoverished subjects and 214 homeless subjects, Linn et al. (1990) found that injection drug use was twice as prevalent among the homeless men and women, as compared with the domiciled subjects. Similarly, 24% of 101 adolescents assessed at a shelter for runaway and homeless youth reported injection drug use (Tynes et al., 1993). Among a sample of 460 homeless women in Los Angeles County, 8% reported current injection drug use (Nyamathi, 1992).

Unprotected sexual intercourse may be more common among homeless populations than those living in stable situations. Immediate survival needs are typically the top priority for this population, and therefore it is unlikely that scarce resources would be spent on condoms. Additionally, for the homeless who get by through commercial sex work, sex may have a powerful economic component which compels unsafe decisions (Shayne and Kaplan, 1991). For example, in a Centers for Disease Control and Prevention (CDC) study of 110 homeless African-American men in Miami, only 49% reported using condoms at least one time during the past 30 days (St. Lawrence and Brasfield, 1995). Preliminary data from the San Francisco homeless youth AIDS Evaluation of Street Outreach Project (AESOP) reveal that only 16% of the young women and 26% of the young men had safe sex with their main partner every time they had sex (Clements et al., 1995).

Impaired mental health status is a factor which may not only lead to homelessness but also contribute to HIV risk (Tynes et al., 1993). Many studies report that homeless populations have mental health problems with greater frequency and severity than the general population (Linn et al., 1990; Tynes et al., 1993). Tynes et al. suggest that 30% to 40% of the homeless have major psychiatric disorders such as schizophrenia and bipolar disorder and that 10% to 20% are dually diagnosed with a severe mental illness and a substance abuse disorder. These chronically mentally ill homeless individuals may exhibit higher levels of HIV risk behavior because of: 1) hypersexuality associated with particular diagnoses, 2) poor impulse control, 3) self-destructive tendencies, 3) impaired judgment, 4) lack of awareness of risks, and 5) potential for sexual victimization. The combined risk for HIV from behaviors associated with mental health issues and substance use may be extremely serious for those dually diagnosed.

Homeless populations may use non-injection substances at higher rates than those in stable living situations in an attempt to make their circumstances seem more tolerable or to mask the pain of difficult life histories. Among homeless male and female clinic users in Los Angeles County, 20% had been hospitalized for alcoholism, 31% had ever been arrested for an alcohol-related incident, and 46% had used at least one other psychoactive substance in the past month (Linn et al., 1990). Based on a 1988 United Way survey, an estimated 30% to 60% of all the homeless in San Francisco have a drug or alcohol problem (Comprehensive Housing Affordability Strategy, 1994). Nearly 57% of 460 African-American homeless women in Los Angeles used non-injection drugs in a study conducted by Nyamathi (1992). Of homeless youth in San Francisco surveyed as part of the AIDS Evaluation of Street Outreach Project (AESOP), 41% had ever used crack and 20% drank alcohol daily (Clements et al., 1995).

By virtue of their lack of shelter, homeless populations are more exposed to street activity, including incidents of physical and sexual violence. Given the power dynamic implicit in violent acts, homeless women are disproportionately affected (Koegel, 1987). Fisher et al. (1995) report that 42% of their sample of homeless women had been battered in the past year and 56% had been raped. Often, these violent incidents are not the first for these victims; many homeless women and others living on the streets come from violent histories of child physical and sexual abuse (Linn et al., 1990). Though the literature primarily focuses on how these issues of violence affect women, we acknowledge that homeless young men and women and other populations are likewise vulnerable.

Many homeless people engage in commercial sex to get the goods they need or want. Commercial sex work is more common among homeless women, though homeless men and youth are also known to be involved. One quarter of the 460 homeless African-American women studied in Los Angeles County currently engaged in commercial sex (Nyamathi, 1992). Among 100 homeless youth accessing services at Larkin Street Youth Center in San Francisco, approximately 40% reported having exchanged sex for goods (Kennedy, 1991). As mentioned in other sections, commercial sex workers typically have more sexual partners than those not exchanging sex for goods and thus are more frequently exposed to the possibility of HIV infection.

HIV prevention among homeless populations presents similar barriers as among impoverished people. Some studies suggest that certain homeless populations may not perceive themselves as being at risk for HIV, given persisting perceptions that HIV/AIDS is a "gay, White disease" (Crawford, 1993). Additionally, homeless populations' denial of their actual risk may relieve anxiety that would be produced by concern about HIV infection (Shayne and Kaplan, 1991). The homeless overall typically must prioritize immediate survival needs over longer-term health issues. This present-oriented focus diminishes the probability that homeless populations will take HIV preventive measures.

Homelessness also poses unique barriers to HIV prevention. Access to HIV prevention materials may be limited for the homeless. Furthermore, these populations' transience, lack of stability, substance use, mental health and other issues make them extremely difficult to reach with prevention messages (Fetter and Larson, 1990; Tynes et al., 1993).

How Does Homelessness Increase HIV Risk?

In a study of 19 agencies serving homeless populations across the country, service providers consistently reported that the homeless may be at increased risk for HIV transmission if exposed to the virus (Fetter and Larson, 1990). These providers explained that "poor health due to substance abuse, chronic infections (particularly untreated sexually transmitted diseases and chronic hepatitis B) and inadequate nutrition indirectly compromises host defenses and may play a role in vulnerability to HIV infection". As mentioned in previous sections, poor nutrition may weaken vaginal tissue, creating a more immediate vector for the virus to transmit during sexual intercourse (San Francisco HIV Prevention Plan, 1995).

Other ways in which homelessness increases HIV risk were previously mentioned and are discussed in greater detail in other sections. A summary of these points includes:

- High prevalence of injection drug use among the homeless, as compared with people in stable living situations, increases the likelihood of blood transmission through needle-sharing.
- Low rates of condom use among the homeless, as compared with domiciled groups, increases the likelihood of HIV transmission during sexual intercourse.
- Disproportionately high rates of chronic and severe mental health issues among the homeless, as compared with housed groups, contributes to higher rates of unprotected sex and substance use.
- Homeless populations have extremely high rates of non-injection substance use. Substance use during sex impairs judgment and reduces the likelihood that protective measures will be taken.
- Subsistence by means of commercial sex work increases the number of sexual partners and contacts that one has. Commercial sex workers also tend to have sexual partners who are themselves at greater risk for HIV.
- Exposure to physical and sexual violence forces those homeless people who are victimized into circumstances out of their control. Unsafe sex is a particular problem for those who are raped, particularly women and young people.
- Low perception of risk for HIV among the homeless and focusing on immediate survival needs decrease the likelihood of HIV protective measures in general.
- Homeless populations are extremely difficult to reach with HIV prevention messages.

Who Are "The Homeless" in San Francisco?

There is no single discrete group of people who can be called and counted "the homeless". Therefore, estimating the population size and diversity requires consideration of various sources. For example, U.S. census procedures estimate the size of the homeless populations in many U.S. cities by adding together people staying in emergency shelters, institutionalized settings and others "visible on the streets". Based on the 1990 U.S. Census counts, the total homeless population in San Francisco is between 6,000 and 8,000 people. The accuracy of these data is clearly limited, however, given that the Census is not designed to capture information on such hard-to-reach populations as the homeless. These figures are considered underestimates and outdated.

A composite picture of San Francisco homeless populations' sizes is provided by other sources. The San Francisco Mayor's Office of Housing's Comprehensive Housing Affordability Strategy (1994) gathered estimates through alternative methods, and considered shelter use data, numbers of people turned away from shelters, people who experience episodic homelessness during the course of a year. Based on this approach, the number of homeless in San Francisco is estimated between 11,000 and 16,000.

Agencies that serve runaway and homeless youth and homeless women provide populations estimates specific to these groups. The San Francisco Homeless Youth Network estimates that there are approximately 2,000 homeless and runaway youth in San Francisco (San Francisco HIV Prevention Plan, 1995). Between July, 1992 and June, 1993, 2,000 women and children were turned away from the 45 beds in 2 emergency shelters that are set aside for those escaping domestic violence (Comprehensive Housing Affordability Strategy, 1994).

The Health Care for the Homeless Program reported in 1987 that the ethnic breakdown of the homeless population in San Francisco is 54% Caucasian, 32% African-American, 9% Latino, 2% Asian and 1% Native American. Comparing these figures with 1990 U.S. Census data, Whites (47%), African-Americans (11%) and Native Americans (0.4%) are over-represented among the homeless. Youth are believed to comprise up to 10%, families 20%, single women 30%, and single men 45% of the total homeless population in San Francisco (Comprehensive Housing Affordability Strategy, 1994).

PSYCHOLOGICAL CO-FACTORS

Examples of psychological co-factors include history of child sexual abuse, abusive relationships, rape, social support, mental health stressers, and self-esteem.

HISTORY OF CHILD SEXUAL ABUSE

A number of studies have related a history of childhood sexual abuse to subsequent behaviors which are also considered co-factors for HIV infection, e.g., substance abuse and prostitution. In the research we examined, several investigators have reviewed these earlier studies to bring together information specifically relating childhood sexual abuse to risk for HIV. In addition, we looked at four empirical studies in the U.S. that have examined possible correlations between childhood sexual abuse and HIV infection.

There is no standard definition of what constitutes childhood sexual abuse. Estimates of the incidence of childhood sexual abuse vary widely, in part due to differences in the way sexual abuse is defined and in the different ages that are included under the heading of childhood. The studies reviewed here are based on self reports, and there are questions about the reliability of self-reported childhood sexual abuse.

What Is the Connection Between a History of Childhood Sexual Abuse and HIV?

The most direct connection is that HIV may be transmitted in the act of sexual abuse. There appears to be relatively little data on the incidence of this mode of transmission (see the brief discussion and references cited in Bartholow et al., 1994). It is also possible that tissue abrasion from sexual abuse could increase the youth's risk of HIV infection from other (nonabusive) sexual relations.

Many studies present evidence that persons with a history of childhood sexual abuse are more likely to be at risk for HIV infection than those without such a history. In one study men who reported early sexual abuse were twice as likely to be HIV positive as men who did not report that experience (Zierler et al., 1991). In another study homosexual men who reported childhood sexual abuse were 1.45 times as likely to have HIV positive status than their nonabused counterparts (Bartholow et al., 1994).

A number of studies indicate that there are psychological and behavioral manifestations associated with childhood sexual abuse and that these manifestations may increase the probability of sexual and/or drug-using behaviors that pose a risk for HIV infection. Those behaviors include various kinds of substance use, both the direct risk of sharing needles and co-factor use of drugs or alcohol, and high-risk sexual behaviors such as unprotected anal intercourse and prostitution. However, these studies also differed in their findings: while some found a strong correlation between childhood sexual abuse and a particular risk behavior, other studies did not find a correlation with that behavior, but with another behavior. Differences in findings may be due to differences in the effects of childhood sexual abuse on different populations or differences in research methodology or definitions.

In assessing the role of childhood sexual abuse as a co-factor in HIV risk, a number of studies indicate that it may be a very important one. "We have evidence that early sexual

abuse is associated with behavioral outcomes that may be having devastating effects on the public health, particularly in relation to the HIV epidemic" (Zierler et al., 1991). "During the second decade of the AIDS epidemic, it is plausible that the unidentified survivors of childhood abuse may surface as being dangerously at risk for HIV infection" (Allers et al., 1993). In their longitudinal study of the association of physical and sexual abuse with HIV risk factors, Cunningham and colleagues (1994) said, "Our study indicates that those youths who have experienced abuse are more likely than those who were not abused to increase their involvement with HIV risk behaviors by the time they reach young adulthood," but they also specify that the "likelihood of HIV risk behavior involvement varies with the type of abuse experienced and the race and gender of the youth."

The study of 602 youth by Cunningham and colleagues (1994), however, reports findings that appear to differ sharply from those of other studies. The investigators assessed differences in demographic characteristics and the number and type of risk behaviors between participants with a single kind of abuse, multiple types of abuse, and no history of abuse. The types of abuse they defined are physical abuse ("hit or beaten by a parent or guardian"), rape ("violently forced into sexual intercourse"), and sexual abuse ("pressured into having sex or made to have sex with someone other than when raped"). They found that "being sexually abused (versus not abused at all) did not contribute to involvement in HIV risk behaviors in youth or young adulthood." The authors did find that, "Although being sexually abused is not associated with risky behavior when it occurs alone, when it occurs with other forms of abuse it becomes an important determinant of risk behavior. Being both beaten and raped, without being sexually abused, does not contribute to involvement in higher numbers of HIV-risk related behaviors, but when sexual abuse is a component of the multiple abuse, multiple abuse is associated with higher mean numbers of risky behaviors in adolescence and in young adulthood."

Findings about the correlation of a history of sexual abuse and injection drug use were not consistent. In one study (Zierler et al., 1991) there was only a weak correlation of childhood sexual abuse and injection drug use. In a study of school children, those males reporting sexual abuse were nine times as likely as the nonabused males to have injected drugs and ten times as likely to have shared needles. The females reporting sexual abuse were three times as likely as nonabused females to have injected drugs and 15 times as likely to have shared needles (Lodico et al.,1994). As the authors note, the findings of the Bartholow and colleagues study differ in several respects from other studies. Unlike the Zierler and colleagues study, Bartholow and colleagues found the abused men in the study were 2.53 times as likely as those not reporting abuse to have used injection drugs at some time, whereas Zierler and colleagues found only a weak 1.2 correlation.

One study found that, overall, those who reported childhood sexual abuse were four times as likely to have engaged in prostitution as their non-abused counterparts; for men, that rose to a figure of eight times as likely (Zierler et al., 1991). In another study, homosexual men who reported abuse were more than twice as likely as the others to have exchanged sex

for drugs or money; they were 2.6 times as likely to have a positive syphilis serology (Bartholow et al., 1994).

Homosexual men reporting sexual abuse were significantly more likely than their nonabused counterparts to have had unprotected anal intercourse in the preinterview four months (Bartholow et al., 1994). One study found that those with a history of childhood abuse were twice as likely to have had multiple sex partners (Zierler et al., 1991). In a study of school children, the females reporting abuse were also 2.4 times as likely to have been pregnant and nearly five times as likely to have been sexually active by age 12 (Lodico et al., 1994). In a study of school children, males who reported a history of childhood sexual abuse were almost six times as likely as their nonabused counterparts to report having gotten a girl pregnant. Males reporting sexual abuse by an adult were 16 times more likely than the other males to report both having been forced to have sex by a friend or date and to have forced someone else to have sex (Lodico et al., 1994).

One of the characteristics of survivors of childhood sexual abuse, according to Allers and colleagues (1993), is sexual compulsivity. Citing Pincu (1989), Allers and colleagues say this is defined as "sex used to sublimate needs (such as intimacy or affection) and mask feelings (such as boredom or isolation)." This kind of sex is said to become part of an addictive process that leads to an increase in the number of sexual partners, and so to increased HIV risk. However, Bartholow and colleagues (1994) found that "measures commonly cited as indicators of 'sexual compulsion' (e.g., frequency and perceived control of sexual behaviors) did not differ between abused and nonabused study respondents." One more finding in which the Bartholow and colleagues study differs from others regards maintaining relationships with significant others. Bartholow and colleagues refer to five previous studies which reported that maintaining such relationships were difficult for sexually abused men and women, but "observed no difference in the level of perceived ability to maintain intimate relationships between abused and nonabused men" (1994).

There is evidence from a number of studies that survivors of sexual abuse are more likely to abuse alcohol and other drugs than are their nonabused counterparts. For survivors of sexual abuse, substance abuse generally may be a part of a cycle to escape emotional pain, which then results in an even greater sense of shame and self hatred. The consequent state of emotional depression and hopelessness may lead to increased risk-taking behaviors. Substance abuse may also result in impaired judgment in regard to risk in both sexual and injection behaviors. Substance abuse may lead to exchange of sex for drugs or for money with which to purchase drugs, and in these circumstances condom use is unlikely. Women who reported childhood sexual abuse were twice as likely to be heavy consumers of alcohol as those who did not report that experience (Zierler et al., 1991). Males who reported abuse were twice as likely to drink before having sex (Lodico et al., 1994).

Bartholow and colleagues say, "We also observed that sexual abuse was related to an earlier age of substance use onset; this finding has not been previously reported." They found

that the abused men in their study began using tobacco, cocaine, stimulants, opiates, hallucinogens, and marijuana at significantly younger ages than nonabused users (Bartholow et al., 1994). However, Fountain and colleagues (1993), in a study of 112 randomly selected methadone treatment clients, found that "abused drug addicts began using drugs other than alcohol at a *later* age than non-abused clients. All measures (first use, first regular use, first narcotic use, first regular narcotic use) indicated that abused clients initiated drug use at a *significantly later* age." In addition to the differences in the populations studied, these contrasting results may relate to different definitions of abuse; Fountain and colleagues are including emotional and physical, as well as, sexual abuse.

Allers and his colleagues (1993) state that one characteristic of survivors of childhood sexual abuse is chronic depression. They cite Kaliski et al. (1990) that the sexually abused adolescent is at higher risk of HIV because of a focus on present survival that outweighs any concerns for the future, and because of depression-related passively suicidal behaviors including high risk behaviors. Courtois (1988) is also cited as reporting that survivors experiencing depression also report helplessness, lethargy, and self destructive thoughts and behaviors.

None of the studies we examined in this review reported extensive data on chronic depression as mediating a history of sexual abuse and increased risk of HIV infection. However, Cunningham and colleagues, citing Allen and Tarnowski (1989) and Stiffman (1989), report that abused adolescents have more behavioral, mental health, and drug problems, are more depressed, and engage in riskier sexual practices such as prostitution.

Bartholow and colleagues (1994) report that, compared with nonabused men, abused men were more likely to have been involved in mental health counseling and to have reported mental health hospitalization; they were more likely to have been hospitalized for substance abuse, including alcohol; for depression; and for suicidal thoughts or actions. They also cite several clinical studies that associate childhood sexual abuse with increased mental health problems, including attempted suicide and post-traumatic stress disorder. They further cite findings from a National Institute of Mental Health study (Stein et al., 1988) that indicates that sexually abused male respondents were more likely than abused women or nonabused male controls to have any DSM-III diagnosis.

In addition to direct correlations between childhood sexual abuse and HIV risk behaviors, some authors have proposed that a history of sexual abuse may render one less able to respond to HIV prevention education. Rosenfeld and Lewis (1993) state that most HIV prevention education programs include components on knowledge about HIV and components on developing and practicing risk reduction skills, to help make the transition from abstract knowledge to behavior change. However, as survivors begin to develop intimate relationships, strong feelings related to their childhood sexual abuse may surface. Their strategies for dealing with these feelings may prevent them from applying what they have learned. The authors say, "Consequently, the dynamics of childhood sexual abuse make it very difficult for

survivors to apply knowledge and skills they've learned about preventing the spread of HIV in situations in which they are face-to-face or sexually intimate with a partner." Polonsky and colleagues (1994) suggest that HIV prevention strategies for the incarcerated also need "to address not only risk-reduction methods, but also victimization issues and barriers to behavior change such as lack of self esteem and low motivation for self protection."

How Does a History of Child Sexual Abuse Increase HIV Risk?

A summary of the ways in which a history of child sexual abuse may increase risk include:

- High rates of injection drug use;
- High rates of adult prostitution;
- Tendency to have multiple partners and use drugs or alcohol heavily.

Who Are Those with Histories of Child Sexual Abuse?

The studies examined found widely varying prevalence rates for childhood sexual abuse. One reason for this is the differing definitions that were utilized. In some cases "childhood" abuse was defined as occurring at anytime before age 18; in other cases the definition of childhood was more restrictive. There is also variation in the questions asked to determine if there was sexual abuse.

The incidence of childhood sexual abuse appears to be much higher for women than for men. None of the research we examined found any significant differences in the prevalence of childhood sexual abuse on the basis of race or ethnicity. Citing Finkelhor (1987), Zierler and colleagues say that prevalence studies among free-living adults have estimated from 6% to 62% of women and from 3% to 31% of men were sexually abused before the age of 18; when the definition is limited to children under 14 years of age who reported physical contact of a sexual nature, estimates range from 28% to 36% percent of the population. (Zierler et al., 1991)

In a survey of over 5,000 White 9th and 12th grade school children (51% male and 49% female), 9% reported having been sexually abused -- a prevalence of 15% for the females and 3% for the males (Lodico 1994). A much higher prevalence rate was found in the widely cited study by Zierler and colleagues. In a sample of 186 heterosexual adults, 22% reported that they had been sexually abused in childhood or adolescence -- 28% of the women and 15% of the men reporting abuse. In this study, the questionnaire was administered by an HIV counselor or nurse clinician. Determination of a history of sexual abuse was based on the question, "Have you ever been raped of forced to have sex?" Only those who said they had such an experience before age 18 were included in the percentages cited (Zierler et al., 1991).

In the study by Bartholow and colleagues (1994), 37% of the 1,001 male homosexual and bisexual respondents reported that "as a child or adolescent they had been encouraged or

forced by an older or more powerful person to engage in sexual contact." Not all of these met the developmental definitional criteria for sexual abuse for the study, so the study reports a 34% prevalence rate of childhood sexual abuse. This is the highest rate for men of any studies we examined -- more than twice the rate reported by Zierler et al. and more than ten times the rate reported by Lodico et al.

Bartholow and colleagues state that prevalence of history of sexual abuse is generally higher among homosexual men than among heterosexual men. The authors cite articles which suggest that some of the correlate factors between a history of childhood sexual abuse and male homosexual identity may include effeminate behavior, lack of secondary sexual characteristics, and the lack of peer and familial support during sexual identity development; and they suggest that such dispositions may prompt gay youth to seek sexual contacts in environments where there is increased risk of sexual abuse.

While the evidence clearly indicates that the prevalence of childhood sexual abuse is high among homosexual and bisexual men, Bartholow and colleagues warn that there is a general lack of recognition of sexual abuse among males, both homosexual and heterosexual. Sociocultural factors such as a male ethic of self reliance and the expected values of being tough, aggressive, and competitive make it more difficult for males to disclose sexual victimization. Considerations of homophobia and the fear of being thought to be homosexual may also contribute to the underreporting and general lack of recognition of childhood sexual abuse of males.

Allers and colleagues (1993) identify that, the populations of teenage runaways, the homeless, and adults with chronic emotional disturbances (i.e., depression) are all "composed of a significantly large number of childhood sexual abuse survivors." Fisher and colleagues (1995) state that there is a "higher prevalence of abuse history in homeless than in domiciled women." Peinkofer (1994) reports that children with a hearing handicap are at higher risk for sexual abuse and for incest behaviors than are their hearing peers.

Polonsky and colleagues (1994) cite two jail surveys. In the first (1989), more than 31% of the women had been abused before the age of 18. Those who reported abuse also reported a higher incidence of drug use and of regular drug use. In a more recent survey (1991), one third of the women reported sexual or physical abuse before the age of 18.

In the County of San Francisco in 1993, there were 1,146 reported cases of child sexual abuse. These data represent a low estimate of the actual incidence of child sexual abuse given that underreporting of this issue is common.

HISTORY OF ABUSIVE RELATIONSHIPS

There is evidence that a history of childhood sexual abuse may predispose involvement in adult abusive relationships. There is also evidence that abusive relationships in themselves may be a consideration for HIV infection.

What Is the Connection Between a History of Abusive Relationships and HIV Risk?

In their enumeration of clinical symptoms in adult survivors of childhood sexual abuse, Allers and colleagues (1993) discuss revictimization: "research on childhood abuse reports that persons who were physically and/or sexually abused are significantly more likely to experience rape and/or physical battering in their adult relationships." Characteristics of these relationships include placing the needs of sexual partners over the needs of self, learned helplessness, and an inability to identify others who are trustworthy.

Such relationships may also include a threat of physical harm, so that it is even more difficult for survivors to insist on safer sex practices without risking further injury. Abusive sexual activity in adult relationships may also result in abrasions which could increase the risk of HIV transmission.

Zorza (1991) found that battery and domestic violence in abusive relationships are important causes of homelessness among women. In a study of 53 women who had been homeless at least three months in the last year, Fisher and colleagues (1995) found that 86% of them had been battered before homelessness. Homelessness, however, exposed these women to high rates of battery and of rape; to reduce their physical risks, homeless women may rely on one man for protection from violence — a man who may be an injection drug user or otherwise at HIV risk. Women in such a dependent relationship may not be able to negotiate safe sex. The authors conclude, "Being homeless may require lifestyles that increase the risk of HIV infection and transmission." For women, abusive relationships often result in homelessness to escape the injury, but the homelessness further exposes them to risks through rape or through the survival mechanisms of prostitution or of finding a protector.

Miller and colleagues (1989) compared samples of alcoholic and of non-alcoholic women. They found that the alcoholic women had higher levels of negative verbal interaction, moderate violence, and severe violence as compared to the non-alcoholic women. From this study (and other articles cited by the authors), it would appear that alcoholic women are at greater risk of being in abusive relationships. The alcohol abuse itself is likely to increase their risk behavior in regard to HIV, and the combination of substance abuse and abusive relationships would be expected to increase their risk.

In two jail surveys cited by Polonsky and colleague (1994), in 1989 44% of the females and 13 percent of the males reported having been sexually or physically abused; in 1991 43% of the females and 12% of the males reported having been sexually or physically abused.

How Do Abusive Relationships Increase HIV Risk?

The primary ways in which abusive relationships may increase risk include:

- If the threat of physical harm is present, as it is in abusive relationships, condom negotiation will probably not occur.
- The risk of becoming homeless is greater among women in abusive relationships; homelessness carries risk for HIV (described in a previous section).
- There appears to be higher rates of substance use/abuse among those in abusive relationships.
- Often certain psychological traits occur among those in abusive relationships, such as learned helplessness and the inability to identify others who are trustworthy. These traits can inhibit careful selection of partners.

Who Has a History of Abusive Relationships?

As mentioned above, there is a close relationship between people who have a history of child sexual abuse and those who have abusive relationships as adults. Therefore, much of the information provided in the previous section applies.

RAPE

Rape is any sexual assault or forced sexual encounter regardless of the type of contact or relationship to perpetrator. Since rape implies a loss of power and control over an individual's desires and intentions, survivors typically experience emotional, cognitive, and physical trauma. Power dynamics and sexist perceptions of women as property have contributed to the overwhelming number of rapes committed by men against women. Given that rape survivors are usually women, most studies have focused on their experiences. Nonetheless, rape is known to occur between people of the same sex and occasionally by women against men.

What Is the Connection Between Rape and HIV Infection?

The most clear connection between rape and HIV infection exists through the possibility of sexual transmission from assailant to victim. Irwin and colleagues (1995) believe the risk of infection during rape is low since the estimated probability of male to female HIV transmission during a single act of vaginal-penile intercourse is less than 2 per 1,000 acts. This conclusion assumes that the risk profile of male assailants resembles that of the general male population and that the sexual acts committed during rape are no more risky than consensual acts. However, studies report that the characteristics of assailants and the sex acts committed during rape may increase the risk of HIV infection for the survivor. Obviously, the victim of a rape has no control over using condoms (Irwin et al., 1995).

Forced sexual acts are often characterized by violence and aggression. Violent and aggressive sex can cause genital and anal tissue to rupture in both the survivor and the assailant, as well as cause other trauma which can provide a more immediate venue for viral transmission. Given that during rape women often experience anal penetration — which is considered an efficient mode of sexual HIV transmission — risk for infection is additionally increased.

Rape perpetrators tend to exhibit certain behaviors and risk factors which increase their likelihood of being HIV infected prior to rape episodes. For example, assailants may engage in sex with multiple partners and may use substances at rates that are higher than those who do not victimize others. These behaviors increase the likelihood that assailants have other sexually transmitted diseases. The risks of HIV transmission associated with STDs are discussed in another section.

It is estimated that up to 25% of the women who are sexually assaulted are "gang raped", or forced to have sex by a group of men during a single assault episode (Irwin et al., 1995). An increase in the number of assailants means an increase in the number of potential exposures to HIV infection. Gang rape poses a particular threat of HIV infection to those who survive it.

Rape is known to cause psychological effects for survivors that may increase their risk for HIV infection in subsequent sexual encounters. Vassall asserts that "the negative effect of sexual assault undermines the survivor's ability to develop and use the personal skills needed for HIV risk reduction and prevention (San Francisco HIV Prevention Plan, 1995)." Post-traumatic stress, depression, and feelings of powerlessness can all contribute to a decreased sense of self-efficacy, particularly during sexual encounters. Many studies note the importance of self-efficacy for implementing HIV self-protective measures (see "Strategies and Interventions" chapter).

How Does Rape Increase HIV Risk?

Characteristics of rape perpetrators and sexual acts typical of rape episodes may increase the risk of HIV infection during rape:

- condoms are rarely used during sexual assault;
- violence and aggression that often accompany forced sex may rupture genital, anal and other tissue so that a more immediate venue for viral transmission is created;
- assailants may have multiple sexual partners and use substances more than non-sex offenders, increasing their risk of being HIV-infected;
- assailants may have STDs at higher rates than non-sex offenders; and
- rape by multiple assailants increases the probability of exposure to a HIV infection.

Furthermore, rape survivors suffer psychological trauma that may decrease their ability to negotiate protective measures during sexual encounters that follow the rape episode.

Who Experiences Rape?

While anyone may be a potential target for rape, certain groups of men, women, and children appear more vulnerable. Rape of men may be more likely among those in institutions (particularly prison) than among those not institutionalized. Further, men (either in or out of jail) appearing vulnerable and effeminate are more often the target of rape than those who appear able to defend themselves.

Irwin et al. (1995) cite studies indicating that between 9% and 24% of American women will be raped at least once in their lifetimes, and that more than 680,000 women are raped in the U.S. each year. The addition of other factors, such as homelessness, commercial sex work and substance use (particularly crack use), increases vulnerability. For example, Fisher et al. (1995) found that homeless women were more likely than domiciled women to be raped.

The sample of women in the Irwin study was recruited from communities in which there is a high incidence of poverty and crack use. Of the 1104 women in their sample, almost 14% had been raped within the last year. These women were recruited from Miami, New York City and San Francisco; the women from New York City were more than twice as likely to have been raped in the past year as either those from Miami or San Francisco.

From the evidence of their study, Irwin and colleagues believe that estimates of rape frequency that rely on reports to police, rape crisis centers, and medical facilities grossly underestimate the number of cases of forced sex. In San Francisco County in 1993, there were 92 arrests for forcible sex; six of which were in the juvenile justice system (California Criminal Justice Profile, 1993). These numbers poorly represent the actual occurrence of rape.

SOCIAL SUPPORT

Social support is a multidimensional phenomenon. Descriptions of social support in the literature usually include the following components:

1) the size of the social support network;
2) the characteristics of those in the support network;
3) the specific supportive acts such as:
   - emotionally-sustaining behaviors (e.g., someone to talk to);
   - problem-solving behaviors (e.g., someone who offers suggestions);
   - indirect personal influence (e.g. someone who conveys a willingness to help);

- environmental action (e.g., someone who manipulates the environment to reduce stress); (Nyamathi, 1991)

4) subjective appraisal of support, specifically a feeling that:
   - one is cared for and loved;
   - one is esteemed and valued;
   - one belongs to a network of communication and mutual obligation (El-Bassel and Schilling, 1994).

What Is the Connection Between Social Support and HIV Risk?

A number of studies have found a connection between personal and social resources – including social support – and positive health practices (Hobfoll and Lerman, 1988; Muhlenkamp and Sayles, 1986; Kobasa et al., 1985). These studies have been conducted for the most part with socioeconomically and environmentally advantaged persons. Among the vulnerable populations that are often targeted for HIV prevention, it appears that social support has less effect on HIV disease prevention (Nyamathi, 1991).

The connection between social support and HIV appears to be stronger among gay men, especially White gay men, than among other populations affected by HIV. Several studies conducted by the Center for AIDS Prevention Studies (CAPS) show that White gay and bisexual men who did not engage in unprotected anal intercourse sought more social support for stressful events in their lives than those who did engage in unprotected intercourse. Further, changes in condom use were associated with higher levels of social support from informal sources of help, such as friends and lovers, but not from formal sources of help, such as physicians and psychologists (Folkman et al., 1992; Catania et al., 1991).

Peterson et al. (1993) conducted a study with African-American gay and bisexual men to see if the same relationship was found between social support, help-seeking behavior, and HIV prevention practices. Similar to the White cohort, those African-American men who engaged in unprotected anal intercourse reported less social support for changing their behavior than men who did not engage in this behavior. However, the proportion of African-American gay and bisexual men engaging in unprotected anal intercourse was much higher than among White gay and bisexual men. These findings suggest that many gay and bisexual African-American men have not received the social support needed to change their behavior. It is also possible, the authors point out, that the help-seeking patterns and norms of the African-American gay men differ from those of White gay men - that men of a higher social class may have greater access to sources of help and may be more likely to utilize these sources when needed.

While the CAPS studies show that among White (and to a lesser degree, African-American) gay and bisexual men there is a connection between social support and HIV, the literature suggests that this connection is weak in other populations. Nyamathi (1991) undertook a study of women particularly vulnerable to HIV — African-American and Hispanic

injection drug users, partners of drug users, and homeless women. She found that the availability of support did not contribute significantly to lowering risk behaviors. Comparing her findings to others in the field, she speculates that "social support may not play as influential a role in mediating stressful events among homeless persons who experience multiple life crises and limited economic resources. It may be that the support available to women who face more stressors on a daily basis is inferior and not as effective as that of participants in the studies of Hobfoll and Lerman and Muhlenkamp and Sayles" (Nyamathi, 1991).

Among drug users in a San Francisco treatment center, social support was not directly related to sexual risk behaviors. However, social support (emotional and material support) was highly correlated with self-esteem (Nemoto et al., 1993). A study of African-American, Latina and White women on methadone found that participants' self-reported levels of social support were not associated with sexual risk behavior; specifically, social support did not effect frequency of condom use or frequency of sex with injection drug users. In addition, the size of the network had no effect on attitudes toward safer sex, negotiation of safer sex or sexual risk behavior (El-Bassel and Schilling, 1994).

Female injection drug users in New York City's central jail facility for women at Rikers Island were more likely to be seropositive if their friends engaged in risky injection practices (Magura et al., 1993). This finding, of no surprise to prevention providers, stresses the point that the composition of one's support network can be a benefit or a detriment to protecting one's health, depending on the group norms.

How Does Social Support Reduce Risk?

As described above, it appears that social support does not reduce risk in all populations. However, among those populations for whom social support reduces HIV risk, "social support acts as a resource providing encouragement to the recipient, and as such promotes health protection" (Kobasa et al., 1985). Social support is considered a major factor that enables individuals to perceive stressors as less threatening and has been seen as a buffer of the adverse health effects of stress (Nyamathi, 1991).

Some studies suggest that social networks can reduce HIV transmission associated with drug use (El-Bassel and Schilling 1994; Des Jarlais and Hunt, 1988). On the other hand, social networks can increase risk in groups where the social norm encourages risk-taking or ignores risk - groups such as injection drug using networks that have not adopted safe needle practices or groups of adolescents and young adults in which the boys gain status for fathering babies from many girls. In these situations, addressing social norms and developing new social norms is a precursor to behavior change.

A study of long-term homeless women in San Diego points to ways in which social support can increase risk. Women who had a specific man to protect them from harm were at

much higher risk for HIV than were women who did not have such a man, because this "protector" himself was at high risk for HIV. Homeless women are better off in terms of HIV risk if they are on their own on the streets, although they are at much higher risk for rape, robbery, and beatings (Fisher et al., 1995).

Who Receives Social Support?

The specific group who receives social support is difficult to target. While there are many studies on social support, they tend to have conflicting findings. For example, a study of women on methadone found that African-American respondents were more likely to have more persons to turn to for support than Latinas or White Anglos (El-Bassel and Schilling, 1994) while Nyamathi's study (1991) of vulnerable women found no significant differences in social support by ethnicity.

The study of a San Francisco substance abuse treatment center revealed that participants who had only one sex partner had higher emotional support than those who had more than one sex partner or no sex partner (Nemoto et al., 1993). The methadone study found that perceived levels of social support did not vary by age, marital status, employment, or number of years on methadone maintenance (El-Bassel and Schilling, 1994). Women who had a higher level of education and who had never been in jail were likely to feel loved by, respected by, and involved with family, friends and others. Women who had been in jail tended to report fewer individuals to whom they can turn for support (El-Bassel and Schilling, 1994).

A study of HIV-infected women and men attending a clinic in North Carolina suggests that there are differences between women and men in the availability and usefulness of social support and coping strategies. Overall, men rated social support as more available and more useful than did women. On the surface, this finding is contrary to previous research on gender and social support, suggesting that social support may not serve the same function for HIV-infected women as for women in general. However, most of the men in this study were White, and most of the women were Black (Fish et al., n.d.).

In terms of social support's effect on HIV prevention, it is tentatively suggested that the issue is less social support per se and more the norms of the support network. Those support networks that emphasize healthy behaviors are more likely to help people reduce their risk for HIV. While these social norms are more easily established in middle-class populations where the daily stressors are fewer, social norms that emphasize safer needle practices can be established in injection drug using social networks, as well.

MENTAL HEALTH STRESSORS

Mental health stressors may be episodic or chronic conditions. For example, anxiety and depression may be of short duration or may be ongoing issues. Schizophrenia and manic-depressive illness are examples of chronic conditions that require lifetime treatment. Stresses

on mental health functioning influence thought and decision-making processes and can hinder physical functioning, as well. These influences can increase risk for HIV infection. This section describes the effect on HIV risk of chronic mental illness and depression.

What Is the Connection Between Mental Health Stressors and HIV Risk?

Chronic Mental Illness

Few studies have assessed HIV seroprevalence among the chronically mentally ill. Those that have are based on in-patient psychiatric hospital populations. For example, of 451 admissions to two New York City hospitals, almost 6% were found to be seropositive as compared with just over 2% thought to be seropositive in the general New York City population (Tynes et al., 1993). Other studies have found slightly higher results, with seropositive rates ranging from 6.5% to almost 10% (Tynes et al., 1993).

While there is no causal link between mental illness and HIV infection, behaviors known to be associated with certain psychological disorders may increase risk of infection. These include "hypersexuality, poor impulse control, self-destructive behavior, casual sexual relationships, lack of awareness of risks, impaired judgment, substance use, and potential for sexual victimization" (Tynes et al., 1993).

Hypersexuality is a behavior associated with manic episodes (periods of increased energy characterized by inflated self-esteem, grandiosity, reckless behavior, or sexual promiscuity) and the early stages of schizophrenia. The compulsive nature of hypersexual behavior makes it unlikely that protective measures during sexual encounters will be taken. Risk is compounded since many chronically mentally ill people have difficulty establishing and maintaining intimate relationships and therefore they may have casual sexual encounters with multiple partners. One study of 60 chronically mentally ill patients in Wisconsin found that over 40% of the men and 19% of the women reported multiple sex partners in the previous year (Office on AIDS et al., n.d.). During all sexual encounters, the men reported using condoms on average 18% of the time and the women reported using condoms only 12% of the time. Moreover, 83% reported that in the past year they had encountered at least one of the following risky situations: exchanging sex for goods, having sex after using substances, or being pressured into unwanted sex.

Chronically mentally ill people may self-medicate or cope with their situations by using substances. According to Tynes et al. (1993), "A recent review revealed that the prevalence of substance use ranged from 20% to 75%, depending upon the patient sample." Injection drug use has also been found among the chronically mentally ill at rates between 6% (Sacks et al., 1990) and almost 10% (Cournos et al., 1991).

Low levels of HIV/AIDS knowledge and low perceptions of risk among the chronically mentally ill also increase risk of HIV infection. One study cited in Tynes et al. (1993) found

that a group of female psychiatric patients scored significantly lower on scales assessing HIV/AIDS knowledge than a non-psychiatric medical control group. Additionally, 43% of the Wisconsin sample "believed that heterosexual women could not get AIDS, and 45% thought that a person with AIDS could be detected by his or her appearance (Office on AIDS et al., n.d.)." In a large study by Sacks and colleagues (1990), many mentally ill participants reported engaging in behaviors that place them at risk for HIV, but perceived their level of risk to be very low.

Depression

Depression is a broad term used to describe an emotional state that is characterized by a lack of energy, apathy towards oneself and others. and feelings of hopelessness and helplessness. Depression is caused by a variety of factors that may be either environmental, biological, or both. Depressive states can also be brief and easily overcome or chronic and difficult to alleviate. Adverse and unjust circumstances, such as poverty, homelessness, and discrimination, have a social component that contributes to depressive states. Since injection drug users, the gay community, and other groups considered to be at elevated risk for HIV infection experience many of these circumstances, they may be more likely to have depressive symptoms (Meinhardt et al., 1990).

Depression can be a barrier to motivation for behavior change and the acquisition of new skills. To illustrate, one study of urban Black women asserts that, "Depression may also be associated with reduced belief in 'self-efficacy', which some suggest may reduce the likeliness of positive behavior change" (Orr et al., 1994). Episodic depression poses a particular barrier for HIV prevention. During depressive states, a person who has learned and practiced safe sex and drug use behaviors may relapse into unsafe behaviors. This may be a particular issue for gay men and others who have experienced multiple loss of friends and community acquaintances to the HIV/AIDS epidemic. Multiple loss may result in relapse into unsafe HIV risk behaviors, particularly since feelings of helplessness and hopelessness are common symptoms of depression resulting from these circumstances.

Several studies have found an association between depression and involvement in high risk behaviors among different groups. In their study of gay men, Perkins et al. (1993) found that increased levels of depression were associated with high risk (i.e., multiple partners and unprotected sex during receptive anal intercourse or unprotected anal sex with a known HIV-positive partner) and self-destructive behavior. Similarly, Nyamathi (1992) found that among a large sample of Black homeless women in Los Angeles, those who participated in high risk behaviors (primarily defined in this study as injection drug use) were more depressed than women not engaging in high risk behavior. Additionally, Latino men were found to use condoms more frequently with secondary partners when they lacked depressive symptoms (Marin et al., 1993).

How Do Mental Health Stressors Increase HIV Risk?

Several behaviors and conditions associated with mental health stressors contribute to the risk for HIV infection among people contending with these issues:

- sexual compulsivity, including multiple casual partners, and low levels of condom use;
- non-injection substance use during sex and injection drug use in general;
- low levels of HIV/AIDS knowledge and low perceptions of risk; and
- potential relapse into unsafe practices.

Who Has These Mental Health Stressors?

There is no accurate picture of who has the varying mental health ailments described above. However, Exhibit 11 shows the distribution of people accessing all types of mental health services from brief counseling to long-term treatment in San Francisco by ethnicity, age and sex. Overall, public mental health services are provided in San Francisco at twice the rate of the state average. For specific ethnic groups, San Francisco provides services at the following rates above the state average: 2.0 times for Whites, 1.8 times for African-Americans, 2.6 times for Latinos, and 1.6 times for other ethnic groups (Meinhardt et al., 1990).

San Francisco leads the state in many diagnoses of chronic mental illness. The rate of major depression in San Francisco is the highest in the state at 561 cases per 10,000 people, as compared with the 447 per 10,000 state prevalence. The prevalence estimate of bipolar disorder (manic-depressive illness) in San Francisco is also the highest in the state at 114 per 10,000 (as compared with the state's 72 per 10,000). Schizophrenia is similarly more prevalent in San Francisco than the state as a whole, at a rate of 108 (vs. 96) per 10,000 (Meinhardt et al., 1990).

Exhibit 11
Demographic Distribution
of San Francisco Mental Health Service Clients

Demographic characteristic	n=15,713
Age	
Under 19 years	21%
Adults 19-59 years	65%
Seniors over 60 years	14%
Gender	
Male	57%
Female	43%
Ethnicity	
White	42%
African-American	24%
Hispanic	12%
Asian and Pacific Islander	18%
Native American	1%
Unknown/Other	3%

Source: Meinhardt et al., 1990

SELF-ESTEEM

Self-esteem is one of the most popularly discussed aspect of people's psychosocial health and well-being. While this popularity has raised awareness about the psychological effects of self-perception on behavior, it has also diffused a common understanding of how self-esteem is best measured and the strength of its relationship to behavioral motivations. Self-esteem is used interchangeably with other terms such as self-regard, self-worth, self-acceptance and self-image (Muhlenkamp and Sayles, 1986) and generally refers to the value that a person places on him or herself (UCSF AIDS Health Project, 1995).

Researchers generally refer to two distinct types of self-esteem. *Basic* self-esteem is the foundation of esteem established during one's early life experiences in relationships with

family members. *Functional* self-esteem is the basis of esteem that is formed later in life through an ongoing evaluation of relationships and social interactions (Muhlenkamp and Sayles, 1986). The latter is believed to be more powerful and amenable to change through intervention. Thus, self-esteem is an internal perception of oneself that is primarily externally determined. The external factors that largely determine self-esteem include: 1) security -- a feeling of safety in one's environment, 2) affiliation -- a sense of belonging and acceptance in important relationships, 3) competence -- the ability to achieve the things that one values and an awareness of one's strengths and weaknesses, 4) selfhood -- a realistic assessment of one's attributes, and 5) mission -- a sense of purpose and ability to influence one's own life circumstances (UCSF AIDS Health Project, 1995).

The relationship between self-esteem and health practices in general and HIV risk-taking in particular has been studied from various perspectives. This section focuses on the effect of low self-esteem on HIV risk-taking behavior.

What Is the Connection Between Low Self-esteem and HIV Risk?

The link between self-esteem and HIV risk is an indirect one. Self-esteem is a contributing factor in the motivation behind certain behaviors, some of which increase risk for HIV infection. Therefore, there are no studies showing that low self-esteem increases the rate of HIV infection; rather, the influence of low self-esteem on participation in HIV risk behaviors has been considered.

Before discussing these studies, difficulties in the general study of self-esteem must be addressed. The fluctuations that occur in self-esteem based on a given context make it difficult to assess (UCSF AIDS Health Project, 1995). Additionally, there is often a high correlation between reported self-esteem and social support (a cofactor discussed in another section), which is unsurprising given the social determination of self-esteem (Muhlenkamp and Sayles, 1986). As a result, it is difficult to tease out the distinct effect of self-esteem apart from the effects of other closely related factors such as social support. Some studies considering the link between self-esteem and illness conclude that it is difficult to determine whether low self-esteem predisposes individuals to health problems or if it is the health problem that has caused the low levels of reported self-esteem (Antonucci and Jackson, 1983). Lastly, researchers often disclaim their studies of self-esteem and health because the reliability of survey instruments used to measure self-esteem may be questionable as they appear to be highly susceptible to socially desirable responses (i.e., answering in ways thought to be desired by the researcher) (Muhlenkamp and Sayles, 1986).

Despite these limitations, studies have shown that self-esteem influences certain behaviors and health practices. In a small study of adults in the Southwest, low levels of self-esteem were found to be associated with poor nutrition, exercise, relaxation, safety, and health promotion and higher levels of substance use (Muhlenkamp and Sayles, 1986). These researchers also considered the effects of other factors such as age, education, gender and

social support on positive lifestyle. In comparison with these other factors, self-esteem accounted for approximately one-fifth of the variance in lifestyle reports.

In a large study of homeless women in Los Angeles, Nyamathi (1991) considered the effects of self-esteem, support availability and coherence (i.e., a sense that one's circumstances are understandable and manageable) on involvement in high risk behaviors such as injection and non-injection drug use, unprotected sex, and having a partner who uses injection drugs. She found that women who had lower self-esteem scores engaged in more high risk behaviors. However, self-esteem was not the only factor that contributed to this finding. Coherence and other practical factors such as addressing immediate survival needs were also significant. Overall, results of the data analysis showed that self-esteem accounted for less than 10% of the variance in high risk behaviors.

In a newsletter entitled, "Self-esteem and HIV Risk-Taking", the UCSF AIDS Health Project (1995) synthesized information on behavioral outcomes of low self-esteem. People with low self-esteem are more likely than those with higher self-esteem to use substances in order to temporarily feel better about themselves. Furthermore, people with low self-esteem are less able than those with higher levels of self-esteem to identify and communicate their needs to others. In sexual situations, this may mean that people with low self-esteem are not only less likely to assert themselves and insist that protection is used but also less likely to avoid risky behaviors in general.

Those who do not value their needs are also unlikely to value their health. This lack of self-concern may contribute to a minimized perception of the effects of HIV or an ambivalence about taking measures to avoid infection. Furthermore, people with more severely low levels of self-esteem may be chronically depressed and even suicidal. A study cited in the UCSF newsletter found that men who desired unprotected anal intercourse were depressed. Feelings of suicidality lead to self-destructive behaviors such as the desire to be physically and/or emotionally abused. Physical violence during sexual encounters can tear tissue and provide a more direct venue for viral transmission.

The partner of a person with low self-esteem may also be at increased risk for HIV infection. Low self-esteem not only contributes to ambivalence about one's own health, but also may mute concern for others. A lack of concern for the health and well-being of one's partner is known to be associated with infrequent condom use (UCSF AIDS Health Project, 1995).

The link between self-esteem and health appears to be stronger among women generally than for men. For example, a study by Herold, Goodwin, and Lero (cited in Muhlenkamp and Sayles, 1986) found that women who had higher levels of self-esteem "had more positive attitudes about birth control and were more apt to obtain and use contraception effectively." When Antonucci and Jackson (1983) looked at gender differences in the relationship between ill health and self-esteem, they found that "the relationship between health and self-esteem was

clearly stronger for women." On the other hand, a study of hypertensive males by Andreoli (cited in Muhlenkamp and Sayles, 1986) found no significant difference in self-concept between those "who complied with prescribed therapy and those who did not."

Alternative sources suggest that self-esteem is a necessary component for motivation to change HIV risk behavior, particularly among disenfranchised groups. During the planning phase of a community-based HIV prevention intervention in San Francisco, qualitative interviews were conducted with injection drug users, poly-substance users, transgender people, gay and bisexual men, and others at elevated risk for HIV infection. Across groups, these informants had high levels of knowledge regarding HIV/AIDS prevention. When probed regarding the barriers to enacting this knowledge, informants overwhelmingly replied that feelings of low self-worth and hopelessness made HIV preventive behaviors in particular and taking care of oneself in general unlikely. Overall, this study found that valuing oneself is a crucial determinant of whether disenfranchised people will seek and utilize available services and incorporate HIV protective behaviors into their routines (Flournoy, 1996).

How Does Low Self-esteem Increase HIV Risk?

Self-esteem increases HIV risk by motivating health-related behaviors. Particularly, low self-esteem is often associated with the following behaviors that can increase the risk of HIV infection:

- injection substance use;
- non-injection substance use during sex;
- other self-destructive behaviors such as involvement in abusive relationships and a desire for unprotected sex;
- ambivalence about one's own and potentially other's health in general;
- valuing other's needs over one's own.

Who Has Low Self-esteem?

People of all ages, socioeconomic classes, and cultures may exhibit low levels of self-esteem (UCSF AIDS Health Project, 1995). Nonetheless, certain groups and communities may be more likely to have lower levels of self-esteem than others. For example, several sources warn that young people are more susceptible to self-esteem issues than other age groups (UCSF AIDS Health Project, 1995; Walter and Vaughan, 1993; Health Initiatives for Youth, 1995). This is partly explained by the developmentally appropriate process of individuation in which young people begin to establish their own beliefs and values independent of authority figures. Many young people feel overwhelmed during this process and experience periods of self-doubt that problematize decision-making and negotiating desires.

Because self-esteem is an internal response to external reflections and attitudes, social and environmental factors play a key role in determining levels of esteem for special populations. For example, discrimination and socioeconomic imbalances can contribute to low self-esteem among disenfranchised communities, including communities of color, the gay/lesbian/bisexual community, the transgender community, those who are differently abled, and homeless and impoverished people (UCSF AIDS Health Project, 1995).

Members of the transgender community who participated in focus groups as part of the California HIV prevention planning process stressed that low self-esteem is pervasive in their community (California HIV Prevention Plan, 1995). Societal messages condemning the transgender community make it difficult for its members to establish and maintain a positive sense of self. This fuels a negative cycle in which many transgender people seek to anesthetize the pain of rejection through substance use.

According to Antonucci and Jackson (1983), people with health problems are likely to have lower levels of self-esteem. Furthermore, they found in their study that as the severity of the health problem increases, levels of self-esteem decrease. The most extreme example they provide is disability: the disabled are most likely of groups with health problems to have low self-esteem.

This society places strong value on formal education and English literacy. Therefore, many people who lack formal education and people for whom English is not their primary language, low self-esteem may be a problem. This dynamic often perpetuates rather than alleviates difficult circumstances for people who lack formal education and English literacy (UCSF AIDS Health Project, 1995).

Other life experiences appear to have a direct influence on self-esteem. Psychologically and physically traumatic experiences in particular contribute to low levels of self-esteem. For example, studies of child abuse survivors consistently show that the experience of abuse damages the esteem of the person surviving it (Allers et al., 1993).

BEHAVIORAL CO-FACTORS

The behavioral co-factors include substance use/abuse, commercial sex work, and involvement with a risky partner.

SUBSTANCE USE/ABUSE

This section examines psychoactive substances (non-injection) that may inhibit a person's ability to make healthful judgments about sexual behavior or further drug use (e.g., alcohol, cocaine, speed, ecstasy, poppers, crack and crystal). Because injection drug use is an

HIV risk factor (a direct means of transmission), it will not be discussed in this section. Due to the pervasive use of alcohol and the abundance of literature available on the relationship between crack cocaine and poppers and HIV risk, these substances will be highlighted.

What Is the Connection Between Substance Use/Abuse and HIV Risk?

Almost all studies of HIV infection associate recreational, psychoactive drug use among homosexual men with HIV-related illness or infection. However, the nature of this association has been controversial. Some studies show that there is a strong link between recreational drug use and HIV-transmitting sexual behaviors (Stall et al., 1986; Seage et al., 1992; Kelly et al., 1992). Others have failed to find an association between recreational drug use and HIV seroprevalence (McCusker et al.; 1990, Moss et al.; 1987). This lack of association may be due to the focus of each study. For example, in a 1993 North Carolina study of gay men, no relationship was found between a history of substance use and high-risk sexual activity (Perkins et al., 1993). However, Perkins et al. believed that the lack of a relationship between substance use and high-risk sexual activity was due to their measuring history of substance use rather than looking at substance use during sex.

Many studies published after 1990 raised this point -- that the association between risk and the general use of drugs is weaker than the association between risk and the use of drugs during sex. In Calzavara et al. (1993) and McCusker et al. (1992), gay men who used recreational drugs in conjunction with sexual activities were found to be at higher risk. However, Calzavara et al. (1993) found that those who used recreational drugs not in conjunction with sexual activity had risk scores that were not statistically different from those who did not use drugs at all.

The association between higher-risk sexual activity and recreational drug use is not an issue specific to the homosexual and bisexual communities. It has also been documented among heterosexual men and women and adolescents (Calzavara et al., 1993). For adolescents, common use of illicit substances, especially alcohol and marijuana, is associated with high risk sexual behaviors. These behaviors include a younger age of sexual debut, inconsistent use of condoms or failure to use them, and sexual intercourse with multiple partners (Shafer et al., 1993). Among HIV-negative, heterosexual men, an NIH/NIAID study found an association of combined sexual activity and drug use with a lack of condom use. Among HIV-negative women, regular drinking and combining sex and drugs were associated with not using condoms. However, no statistically significant association was found between alcohol/drug use and condom use among HIV-positive women (Kennedy et al., 1993).

What Is the Connection Between Crack and HIV Risk?

Crack cocaine, a smokable and highly addictive form of cocaine, gained widespread use in many urban areas in the U.S. in the mid-1980s. Unlike powder cocaine, crack may be

obtained for a very low unit price and it has become widely used by young persons in many poor and minority communities (Edlin et al., 1992).

There is evidence that the use of crack cocaine increases the likelihood of being HIV-positive. For example, in a recent study of pre-natal patients, 26% of crack-users were HIV-positive, while only 2% of non-crack-users tested positive for HIV. (McKeganey, 1994).

A large study of 18-29 year olds examined differences in high risk behaviors among injection drug users who smoke crack, injection drugs users who do not smoke crack, non-injection drug users who smoke crack, and those who neither inject drugs nor smoke crack. Researchers found that crack smokers were at higher risk for HIV than were injection drug users. The highest risk group included those who smoked crack and did not inject drugs, followed by injection drug users (which included crack smokers and non-crack smokers). Both men and women who smoked crack but did not inject drugs reported having more sex partners than non-crack-smokers (Edlin, et al., 1992).

A 1993 study of Black San Francisco and Oakland teenagers found that crack users were at higher risk than non-users. Overall, an index of risk held about the same mean score for boys and girls, but the nature of the risks were very different (Fullilove et al., 1990a). Teenage girls who used crack were less likely to have used a condom during last sexual intercourse and were approximately three times more likely to report having had sex under the influence of drugs or alcohol than were their non-using counterparts. One in four crack-using girls exchanged sex for money or drugs. Crack-using boys had a significantly higher mean number of sexual partners in the previous 12 months than did non-using boys. They were almost four times more likely than non-users to report having had sex under the influence of drugs or alcohol. However, crack-using boys were just as likely to use condoms in their most recent sexual intercourse as were non-using boys (Fullilove et al., 1993).

Fullilove et al., (1990a) also found that adolescent female crack users were more likely to have a history of STDs than were crack-using boys. Almost half of the adolescents combined crack and sex, and of them, over half reported they had had at least one STD. However, of the teenagers who combined sex with crack, girls were far more likely to have an STD history (81% of girls, versus 39% of boys) (Fullilove et al., 1990b). The highest prevalence of an STD history was among young women who reported having sold crack as well as having combined crack use with sexual relations - 92% of these young women had a history of STDs, compared to 29% of those who had not sold crack or combined it with sex (Fullilove et al., 1990b).

What Is the Connection Between Alcohol and HIV Risk?

The connection between alcohol and HIV risk is much weaker than the connection between crack or poppers and risk. "Among researchers, there is no clear consensus on whether alcohol use potentially increases rates of high-risk sexual activity" (Avins et al.,

1994). Several studies have found there is a definite link between alcohol and increased rates of infection or risk activities. A 1993 Toronto study of gay men found that alcohol and marijuana were strong predictors of high-risk sexual activity (Calzavara et al., 1993). The AIDS in Multi-Ethnic Neighborhoods study in San Francisco found that heterosexual men and women undergoing alcohol treatment had a much higher prevalence of HIV infection (3% and 4%, respectively) than did comparable men and women in these communities (0.5% and 0.2%, respectively). Additionally, the rates of high-risk behaviors were several times higher among these alcohol-dependent clients than among the comparable general population respondents. Stall and McKusick reported that the combination of alcohol and drug use was a predictor of reported unprotected sexual intercourse among male and female heterosexuals in an exit survey of heterosexual pick-up bar patrons in San Francisco (cited in Ostrow et al., 1990).

On the other hand, several studies have found no association between alcohol use (general alcohol use and alcohol use during sex) and high-risk behavior or HIV infection. (Paul et al., 1994; Avins et al, 1994; van Griensven et al., 1987; Ostrow et al., 1994; Davidson et al., 1992). The Chicago MACS study found no link, except that heavy users (60+ drinks/month) at their first interview reported higher frequency of unprotected receptive anal intercourse than did non-users or moderate users. This association was not observed at any subsequent period (Ostrow et al., 1994). The Pittsburgh MACS study found that alcohol bore little relation to unprotected receptive sexual practices once other psychosocial variables (such as social support and depression) were controlled. Alcohol was only associated with riskier insertive behavior, which can place the partner at risk (Davidson et al., 1992). According to Avins et al. 1994, "These disparities may stem from differences in subject selection, measurement of variables and definitions of high risk behaviors. An alternative explanation for the elevated seroprevalence is that alcohol abuse may be a marker for individuals who tend to have risk-taking personalities rather than a direct cause of high-risk behavior. In these individuals, alcohol abuse and high-risk sex may both be manifestations of a general behavior pattern."

Among adolescents, there were indications that alcohol was linked to risk. Adolescents in a San Francisco detention facility who used alcohol before sexual activity stated that they were less likely to use condoms (Shafer et al., 1993). Further, there was a strong association between alcohol use and STDs; those who drank daily were 3.5 times more likely to have or have had an STD as compared to those who abstained from alcohol. Among Black and multi-ethnic youth, heavy drinkers were almost twice as likely to have had an STD; among Hispanic and White youths, heavy drinkers were 4.74 times as likely to have had an STD when compared to those who abstain (Shafer et al., 1993). Data from the San Francisco Young Mens Study presented at the APHA meeting (1993) indicate that young gay and bisexual men who were high on alcohol during sex were somewhat more likely to report practicing unprotected anal sex (39% compared to 28%).

What Is the Connection Between Poppers and HIV Risk?

The alkyl nitrites (amyl, butyl, iso-propl) are colorless or yellow liquids at room temperature and are highly volatile. They have a fruity odor (often described as unpleasant) and have been nicknamed 'poppers' because of the sound made when glass capsules containing amyl nitrite are crushed (Haverkos et al., 1994). Inhalation of nitrites relaxes smooth muscle, causing intense flushing, a fall in blood pressure, and an increase in heart rate, accompanied by feelings of warmth, rapid pulse, and throbbing sensations. It may produce a euphoric effect and/or a headache (Haverkos and Dougherty, 1988).

Nitrite can be obtained as a prescription drug (amyl nitrite) used to treat cardiovascular disease, as liquid incense (in labeled bottles sold as room odorizers), and in unlabeled bottles which usually contain a combination of amyl, butyl, and isobutyl nitrite (Seage et al., 1992). In response to the chronic adverse effects of inhaling nitrites, Congress enacted a ban on the manufacture and retail sale in 1988. After that, isopropyl nitrite was marketed as a room odorizer until 1990 when Congress outlawed the manufacture and sale of all alkyl nitrites. Since then, at least one manufacturer has developed a cyclohexyl nitrite inhalant which is not technically banned. Underground manufacturers and importers continue to market butyl and isopropyl nitrites illegally (Haverkos et al., 1994).

In study after study, the use of poppers has been strongly implicated in HIV risk among gay men (dewit, 1994). We found no studies of poppers' connection to HIV risk among other populations; it appears to be a drug most commonly used by gay men. In the 1993 study of Toronto gay men, poppers used in conjunction with sex was the strongest predictor of high-risk activity (Calzavara et al., 1993). Other studies mirrored this finding (Fisher, 1992; McKirnan, 1993). Paul et al. (1994), in a study of people in treatment, found that combining poppers with sex was more frequent among those who reported unprotected anal sex with non-primary partners. The Pittsburgh MACS study found that the association between popper use and risky receptive intercourse was significant even after other psychosocial variables (e.g., social support and depression) were controlled. Young men in the study showed an even stronger relationship between popper use and risk behavior than did older men (Davidson et al., 1992). In the Chicago MACS study, men reporting popper use consistently participated in more high-risk sexual activities than did sexually active men not reporting popper use (Ostrow et al., 1994). Data from the San Francisco Young Men's Study indicate that young gay and bisexual men who were high on poppers during sex were much more likely to report practicing unprotected anal sex — 60% compared to 32% (Lomp, 1994).

Poppers are also implicated in HIV infection. Among all variables tested, Penkower et al. (1990) found that nitrite inhalant use was the most strongly associated with HIV seropositivity among a cohort of 1045 gay men. The Chicago MACS study found an association between the use of poppers and seroconversion (Ostrow, et al., 1995) In a New England study of gay men, those who *always* used nitrites while engaging in unprotected receptive anal intercourse were 4.2 times more likely to be HIV-infected than men who had

engaged in unprotected receptive anal intercourse but *never* used nitrites. Those who *sometimes* used nitrites when engaging in unprotected anal receptive intercourse were 11 times more likely to be HIV-infected compared to those who never engaged in unprotected receptive anal intercourse nor used nitrites. Even when the researchers controlled for the number of unprotected receptive anal sex partners of unknown HIV status and history of gonorrhea or syphilis, the odds ratio decreased only slightly, indicating that popper use was the more significant risk factor (Seage et al., 1992).

How Does Substance Use/Abuse Increase HIV Risk?

The literature presents several possible explanations of how substance use/abuse works to increase HIV risk. These explanations are outlined below:

- Drug and alcohol use may be a marker for a style of risk taking, and as such may be a marker for high-risk sexual encounters (Ostrow et al., 1994; Avins et al., 1994; O'Campo et al., 1992).
- Substance users may be a subgroup of persons whose sexual partners are more frequently HIV-positive, so that a given behavior is more likely to produce seroconversion (Ostrow et al., 1994).
- The use of drugs may result in high-risk behavior because it decreases inhibitions and discrimination, particularly during sexual arousal, which in itself is a form of disinhibition (Calzavara et al., 1993; Kennedy et al., 1993).
- Alcohol and drugs may alter risk perception and have a distorting influence on the decision-making process of whether or not to use condoms (Kennedy et al., 1993).
- Use of alcohol or drugs may make the proper use of condoms less likely (Ostrow et al., 1995).
- Drugs and alcohol can alter immune functioning, so that exposure is more likely to produce infection (Ostrow et al., 1994; Avins et al., 1994).
- Crack appears to have an influence on the number of sexual partners and trading sex for money or drugs (Edlin, et al., 1992).
- Poppers dilate blood vessels and relax the sphincter to make it easier to accept a partner's penis (Seage et al., 1992). Use of poppers may increase tolerance to rectal abrasions (Moss, 1987). Pain cues which would usually lead to adjustment or termination of the contact are neglected by those on poppers and the intercourse is prolonged (van Griensven, et al., 1987).
- A biologic explanation might posit that popper or cocaine use either causes transient immune suppression that increases the likelihood of infection given a particular exposure, or makes it easier for infected semen to cross the rectal mucosa and enter the bloodstream of the receptive partner. Acute immunosuppressive effects of both poppers and cocaine have been reported recently in support of these possible mechanisms (Ostrow et al., 1995).

Ethnicity

We have not found information that specifically describes substance use/abuse by ethnicity. We did find, however, several indicators of this use by ethnicity. Exhibit 12 shows the percentage by ethnicity of instances of emergency room drug episodes, Community Substance Abuse Services (CSAS) Treatment clients, and San Francisco population.

Exhibit 12
Distribution of Ethnicity among SF Emergency Room Drug Episodes, CSAS Treatment Clients and General Population, 1993-94

	SF ER Drug Episodes	CSAS Treatment Clients	SF Population
	n=8,900	n=14,698	n=731,876
African American	30%	40%	11%
Asian/ 'Other'	4%	7%	30%
Latino	14%	10%	15%
White	52%	43%	45%

Source: Abramowitz AG and Patt F. "San Francisco Substance Abuse Indicator Data: Volume 2, Key Indicator Charts and Tables". Compiled and distributed by the Epidemiology Unit, Community Substance Abuse Services, Department of Public Health, January 1995.

Further, the AIDS Multi-ethnic Neighborhood (AMEN) Study of 20 - 44 year olds in specific San Francisco neighborhoods provides information about substance use in three areas, shown in Exhibit 13.

Exhibit 13
Substance Use in Past 12 months from the San Francisco AMEN[1] Study, 1988-89.

	Neighborhood			
Substance*	Western Addition (n=566) %	Bay View (n=298) %	Mission (n=906) %	Total (n=1770) %
Alcohol				
Heavy use	23.0	12.4	22.8	21.1
Marijuana				
Monthly or more	32.5	23.8	24.3	26.8
Cocaine				
Monthly or more	7.0	14.4	7.7	8.6
Crack				
Monthly or more	3.4	13.4	1.5	4.1
Amphetamines				
Monthly or more	3.0	1.3	2.5	2.5
Barbiturates				
Monthly or more	1.2	3.0	2.0	1.9
Heroin/opiates				
Monthly or more	1.4	2.3	2.0	1.9
LSD/PCP/psychedelics				
Any use	12.7	2.7	10.4	9.8
MDA/Ecstasy/etc.				
Any use	10.4	1.7	6.3	6.8

*Substance use in the last 12 months.
[1] The AIDS Multi-ethnic Neighborhood (AMEN) Study was conducted by UCSF with unmarried 20-44 year olds in specific San Francisco neighborhoods.
Source: Abramowitz AG and Patt F. "San Francisco Substance Abuse Indicator Data: Volume 2, Key Indicator Charts and Tables". Compiled and distributed by the Epidemiology Unit, Community Substance Abuse Services, Department of Public Health, January 1995.

Crack cocaine is a drug used more often by African Americans than other groups. For example, in a large four-city study, over 85% of crack users were Black and 11% were Hispanic. Slightly more than half were males (Edlin et al., 1992).

Gay, lesbian, bisexual, transgender communities

Lesbian, gay and bisexual women and men appear to use alcohol and other drugs more often, in greater amounts and in combination more frequently than the general population. According to the "SF Lesbian, Gay and Bisexual Substance Abuse Needs Assessment", 31% of all gay/bisexual men and 18% of all lesbian/bisexual women reported using substances at the highest level and 11% of men and 13% of women reported using substances at the

moderate level. Thus, a total of 34% of the women and 42% of the men may be using at significant levels (SF Substance Abuse Indicator Data, 1995).

The Needs Assessment reported that, for men, the most commonly used drugs were alcohol (75%), marijuana (50%), amyl nitrate (27%), pain killers (26%), amphetamines (18%), and cocaine (17%). Except for alcohol, these rates are significantly higher than for men in the general population. Only 28% had been in recovery for alcohol or drug use (SF Substance Abuse Indicator Data). In the Chicago-MACS study of gay and bisexual men, the proportion of men using each category of recreational drug (marijuana, cocaine, poppers, et cetera) decreased by at least 50% between 1984 and 1988, and the proportion of men abstaining from any recreational drug usage increased from none at baseline to one-third of the cohort at the end of the study period (1990). Nevertheless, approximately half of the cohort continued to use one or two recreational drugs other than poppers, and more than 40% reported the use of poppers during the most recent assessments (Ostrow et al., 1994). Nitrite usage among gay men dropped after the connection to Kaposi's Sarcoma was promoted - one study indicated that it dropped from 66% in 1984 to 35% in 1989.

According to the 1995 San Francisco Substance Abuse Indicator Data, lesbian and bisexual women most commonly used alcohol (66%), marijuana (38%), pain killers (29%), tranquilizers (16%), and cocaine (14%). Except for alcohol, these rates are significantly higher than for women in the general population. Only 26% had been in recovery for alcohol or drug use. However, data from a large community-based health survey of lesbian and bisexual women conducted by the San Francisco Department of Public Health AIDS Office in 1993 indicate that 82% of their sample used alcohol at least a few times per year and that more than 40% drank alcohol 1 to 3 times per week. Regarding other substance use, these women reported using marijuana (67%), MDA/ecstasy (23%), LSD/psychedelics (22%), cocaine (21%), downers such as Valium (14%), and uppers such as speed or crystal methamphetamine (14%). Injection drug use in the past three years was very low, reported by only 2% of the sample.

Among transgender persons, no data were reported in the Substance Abuse Indicator Data. Service providers working with transgender communities report that the substance use/abuse in these communities tends to be heroin, in addition to injecting hormones. Among male prostitutes (most of whom were transgender MTF) participating in a New Orleans study, 68% were high on at least one substance while working, and 57% reported using drugs or alcohol with their clients.

Women

In San Francisco, women are more likely to be served through detox or methadone maintenance than in residential treatment facilities. Of those served by CSAS, the distribution of the primary drug was: 49% heroin, 23% crack cocaine, 21% alcohol, 2% other cocaine, 1% methamphetamine, 1% marijuana and 3% other drugs. Women comprised 29% of alcohol

and drug treatment episodes for FY 91/92. Of these women, 47% were White, 42% were Black, 7% Latina, 2% Asian, and 2% Native American (SF Substance Abuse Indicator Data, 1995).

Adolescents

Alcohol is the number one substance problem for San Francisco youth, according to San Francisco Unified School District reports. Of students surveyed, 59% of high school students and 39% of middle school students had ever drunk alcohol. Cocaine use for this sample was 6% for high school students and 2% for middle school students. Nine percent of high school students had ever tried other drugs, such as LSD and PCP.

A 1991 U.S. Public Health Survey reports that San Francisco homeless and runaway youth use substances at rates much higher than the general U.S. adolescent population. Within the prior two months, 31% used marijuana (versus 23% nationwide); 10% (versus 2% nationwide) used LSD; 9% (versus 5% nationwide) used speed and 1.5% (versus 0.2% nationwide) used heroin. Cocaine use was similar among homeless and general adolescent populations - 9%. An estimated 65% of SF homeless youths have been in a drug treatment facility, and 15% have used injection drugs.

COMMERCIAL SEX WORK

Commercial sex work is the exchange of sex for money, drugs, a place to stay, or any other perceived benefit. Sociocultural taboos and legal restrictions contribute to a clandestine aspect of commercial sex work that often necessitates isolated and secretive conditions for workers. Commercial sex workers may be street-based or "off-street", i.e., based out of a home, apartment, hotel, massage parlor, or some other dwelling. Pornography and phone sex services are also considered part of the sex industry. While the majority of sex workers are women, men and transgender people are also known to be involved. This section discusses the link between commercial sex work and HIV risk in general. Differences in risk between street-based and off-street sex workers will be highlighted.

What Is the Connection Between Commercial Sex Work and HIV Risk?

There is substantial concern for the degree of risk that commercial sex workers face for HIV infection through sexual transmission, because sexual acts are the defining behaviors of their trade. High rates of HIV infection have been reported for populations of commercial sex workers in many places around the world (Boles and Elifson, 1994). Alegria et al. (1994) reported that 32% of their sample of mixed street-based and off-street sex workers in Puerto Rico tested HIV-positive. In a Baltimore study, Astemborski et al. (1994) found high HIV seroprevalence rates among sex workers who also inject drugs (28%), and that the rate was twice as high among these sex workers who had more than 50 paying partners than for those

who had fewer than 50 paying partners. An 8% HIV infection rate among women sex workers in San Francisco was reported by Dorfman et al. (1992).

The high rates of sexually transmitted diseases (STDs) found among sex industry workers increase risk for HIV. McKeganey (1994) cites a large Los Angeles study of street prostitutes in which 47% reported at least one STD in the past 6 months and 34% showed signs of past or current syphilis. STD rates among sex workers who also use drugs appear to be even higher. Furthermore, STD rates were higher (81%) among those workers who had more than 50 paying customers (Astemborski, 1994). Among the women in the San Francisco study, syphilis infection was highest (23%) among those who also used crack (Dorfman et al., 1992).

Behaviors common among sex industry workers increase their risk for HIV infection. Frequency of involvement in these behaviors and the influence of these behaviors on HIV risk may be different for street-based and off-street workers and for those who engage in sex work as their primary source of income versus those who exchange sex for goods intermittently. The prostitute advocacy group Coyote, the San Francisco Bay Area California Prostitute Education Program (Cal-PEP), and available research suggest that the risk for HIV that street-based sex workers face is higher than the risk for those working in off-street situations (California HIV Prevention Plan, 1995; Lockett, 1995; McKeganey, 1994). Additionally, risk is higher among immigrant Asian women who sell sex in massage parlors than for those working in other off-street sites because many of these women are required to provide risky services while held under the threat of deportation by their "manager," who is also usually their legal sponsor (California HIV Prevention Plan, 1995; Lockett, 1995).

Injection drug use appears to be more prevalent among sex workers than for those who do not trade sex. The relationship between injection drug use and commercial sex work is a complicated one because it is not always clear which behavior motivates the other, or whether any cause-effect relationship exists at all. In other words, while many commercial sex workers may inject drugs to more easily tolerate their circumstances, many injection drug users may engage in commercial sex work to get the drugs they use (Onorato et al., 1995).

Condom use is another important determinant of HIV risk for commercial sex workers. While the general population of sexually active people typically have only casual and/or main partners, sex workers contend with the third category of paying partners. The addition of paying partners introduces added factors for condom use decision-making. First, the economic component of commercial sex may motivate sex workers to accept more money for unsafe sex with a paying partner (Shayne and Kaplan, 1991). Second, sex workers may perceive a lack of power in their relationship with a paying partner because they are often treated as objectified commodities; if this power imbalance is challenged, clients may attempt to reaffirm it by means of threats or actual violence (Karim, 1995). This lack of power is a disadvantage for sex workers' condom use negotiations. Furthermore, many studies have shown that sex workers use condoms less with main partners as compared with paying partners (McKeganey,

1994). For example, in the San Francisco study, 94% of the women reported sometimes or always using condoms with paying partners, as compared with 25% who used condoms sometimes or always with their main partners (Dorfman et al., 1992).

The high numbers of sexual partners that characterize sex work particularly increases the likelihood of exposure to HIV infection (Onorato, 1995). Cal-PEP estimates that female street-based sex workers may see between 10 and 15 clients per day, putting the annual figure probably into the thousands (Lockett, 1995). Estimates for off-street sex workers are somewhat less; Cal-PEP estimates that off-street workers may see between three and 10 clients per day. These figures are likely lower for male sex workers. A San Francisco study of condom failure revealed that the median number of clients for street-based male sex workers was six for the previous week, or over 300 per year (Waldorf and Lauderback, 1993). Risk is compounded by the fact that paying partners may themselves be either HIV-infected or at risk for infection.

Non-injection substance use during sex increases sex workers risk for HIV infection. Overall, sex workers appear to use substances more than those who do not trade sex. As with injection drug users, non-injection substance users may exchange sex for the drugs they use and, conversely, sex workers may use drugs to more easily endure their circumstances. Most studies reporting sex workers' substance use and HIV risk focus on crack cocaine smoking because of its association with unprotected intercourse and burns in the mouth that increase risk of oral transmission (Boles, 1994; Dorfman, 1992; McKeganey, 1994). For example, 66% of the San Francisco study sample used crack (Dorfman et al., 1992). Overall, Cal-PEP estimates that at least 50% of street-based sex workers are addicted to substances (California HIV Prevention Plan, 1995). Moreover, McKeganey (1994) reports that 57% of his sample used drugs during sex with their paying partners.

Other characteristics commonly found among commercial sex workers may increase HIV risk. Several studies have reported a strong connection for both men and women between child sexual abuse and involvement in commercial sex work (Bartholow and Doll, 1994; Cunningham et al., 1994; Zierler et al., 1991). As discussed in another section, survivors of child sexual abuse often have low self-esteem, experience major depression, and are more likely to be revictimized as adults — all of which may contribute to increased risk for HIV infection (Allers et al., 1993). Street-based sex workers are particularly vulnerable to physical and sexual assault by paying partners and others to whom they are exposed on the streets (Karim et al., 1995). Forced sex further prohibits safe sex measures and violent sex may rupture tissue and provide a more immediate venue for infection.

Commercial sex work is a primary economic alternative for many transgender people, and a large percentage of the estimated 4,000 to 6,000 transgender people in San Francisco (Whitlock, 1995) are known to rely on the sex industry for their subsistence. Transgender commercial sex workers' risk for HIV infection may be different from other groups. One study reports that transgender sex workers are more likely to have receptive anal sex with their

paying partners than with their steady partners, a behavior with direct consequences for HIV infection if protection is not used (Elifson et al., 1993). Pre-operative transgender sex workers who are trying to earn money for gender confirmation surgery may perceive a monetary incentive for unprotected sex as beneficial in the moment, despite the HIV risk implied.

It is important to note that a lower infectivity rate, lower STD rates, and a relatively high rate of condom use with paying customers was reported for San Francisco sex workers by Dorfman et al. (1992), as compared to findings in other cities. These data indicate that sex workers in San Francisco, while at high risk overall, may be at lower risk than sex workers in other cities. This may be explained by the early and effective HIV education interventions that were promoted in San Francisco by prostitute-specific providers.

Unique barriers to HIV prevention accompany commercial sex work, so that sex industry workers may be at increased risk. The illegal status of sex work has many effects. First, sex workers tend to remain as invisible as possible to avoid police attention. In doing so, they also remain hard-to-reach by outreach workers. Additionally, sex workers surveyed as part of the planning process for the California HIV Prevention Plan reported that the police often confiscate condoms as evidence of their illegal sex work activity (California HIV Prevention Plan, 1995). Additionally, most sex workers are in their trade out of economic necessity; thus, any HIV prevention effort must either work within that paradigm or offer a viable employment alternative. Furthermore, sex workers often resist street-based HIV education from outreach workers because of the time, and hence lost income, involved (California HIV Prevention Plan, 1995).

Sex workers, as with impoverished and homeless populations, may tend to value immediate survival needs over long-term health issues. According to a sex worker quoted in Karim et al. (1995), "When you are a prostitute, you do not think of tomorrow; you just think of now." An effect of this value orientation is often the refusal to use protective measures in sexual situations if a more immediate benefit, such as more money or goods, is offered.

How Does Commercial Sex Work Increase HIV Risk?

Circumstances and consequences of commercial sex work increase HIV risk in the following ways:

- high numbers of sexual contacts;
- high prevalence of STDs; and
- high rates of substance use/abuse;
- high rates of forced and/or rough sex (leading to abrasions, lesions, etc.);
- less voice in using condoms.

Who Are the Commercial Sex Workers in San Francisco?

The clandestine effect of commercial sex work's illegal status poses difficulties for estimating this population's size and demographic characteristics. In the absence of such data, estimates may be drawn from other informed sources. According to Cal-PEP, there may be as many as 15,000 sex workers in the San Francisco Bay Area, including street-based and off-street groups. Of these, approximately 10% to 25% are estimated to be street-based and the other 75% to 90% work out of hotels, apartments, massage parlors or some other dwelling (California HIV Prevention Plan, 1995; Lockett, 1995). Service providers suspect that the street-based sex workers are at highest risk for HIV infection because they lack resources and work in more vulnerable situations. Also, if the paying partners of street-based sex workers are at higher risk, the risk for street-based sex workers is increased accordingly.

Service providers estimate that illegal sex work is conducted by some employees in almost all of the 106 legally licensed massage parlors in San Francisco. Women are most often employed in these parlors and there may be between three and 10 people doing sex work with as many as five to 10 clients per day in each parlor.

Service providers strongly suspect that in San Francisco there are more female sex workers than men. Nonetheless, there is also a significant number of males and transgender male-to-female people who sell sex. The ethnic distribution of sex workers may resemble statistics for populations living in poverty. Cal-PEP estimates that most commercial sex workers are between the ages of 18 and 37 years. However, there are also many sex workers in their early and mid-teens -- typically those who begin sex work on the streets -- as well as some who work up to the age of 50 years. While some sex workers do earn medium to high incomes, they are disproportionately poor overall (California HIV Prevention Plan, 1995).

Finally, arrest rates provide another, although limited, source of information for numbers of sex workers in San Francisco. In 1993, there were a total of 1,785 arrests for prostitution. Of these, the overwhelming majority (98%) were adults and 67% were women (California Bureau of Criminal Statistics, 1993). Given Cal-PEP's estimate that 10-25% of sex workers ever get arrested, the population total could be as high as their 15,000 estimate (Lockett, 1995).

MULTIPLE PARTNERS AND RISKY PARTNERS

Most research considers "sex with multiple partners" to be sex with more than one partner in the past year. Likewise, a risky sexual partner is typically defined as someone who is HIV-positive, uses or has used injection drugs, has been nonmonogamous, had a blood ransfusion prior to 1985, or is a hemophiliac.

What Is the Connection Between Multiple Partners/Risky Partners and HIV Risk?

Multiple Partners

People who have sex with multiple partners are at greater risk for HIV infection than those who have sex with a single partner because the probability of contact with an infected individual increases as the number of partners increases (Catania et al., 1992a or b??). Furthermore, the risk of HIV infection increases as the number of sexual partners and contacts increase even if condoms are used consistently because the probability of condom failure (i.e., they are used improperly, break, or slip off) similarly increases.

Condom use patterns are important to consider when discussing the HIV risk associated with multiple partners. Even though the probability of encountering an HIV-infected partner increases with the number of partners, the actual risk derives from the lack of protection used with these partners. Condom use patterns with people who have multiple partners are often differentiated according to type of partner, i.e., whether the partner is primary (or steady) or secondary (or casual). Given this distinction, a typical pattern emerges of little or no condom use with primary partners and increased condom use with secondary partners. To illustrate, Leigh et al. (1993) found that among a large national sample only 8% of those reporting more than one sexual partner used condoms every time they had sex. When partner type was considered, 23% reported using a condom every time with a casual partner, implying that "although respondents with more than one sexual partner report using condoms only rarely when all partners are considered, their condom use with nonprimary partners is somewhat higher."

Studies have found that the rate of HIV seropositivity among those who report sex with multiple partners is higher than those who report sex with single partners. For example, in a study of injection drug using women, rates of HIV infection increased significantly as the numbers of partners with whom they traded sex for goods increased: 23.2% of those who reported not exchanging sex for goods, 23.7% of those who reported exchanging sex with fewer than 50 partners, and 47.6% of those who reported exchanging sex with more than 50 partners were HIV-positive (Astemborski et al., 1994). Additionally, Nemoto et al. (1990) report that among the women in their sample of injection drug users, those who were HIV-positive reported more male sex partners in the past year than those who were HIV-negative.

Risky Partners

People who do not have sex with multiple partners can be at risk as a result of their partner's behavior. For example, married women are unlikely to use condoms with their spouses if they assume monogamy. However, a large national survey of the general U.S. population shows that of those married, 3% White males, 2% White females, 19% Black males, and 4% Black females had sex with two or more partners in the previous year (Anderson and Dahlberg, 1992).

Sex with partners who use injection drugs or who are HIV-positive similarly increases risk. For example, in the San Francisco-based AIDS in Multi-ethnic Neighborhoods (AMEN) study, "White women, compared to all other groups, were more likely to report having had a sexual partner who used injection drugs in the last year, ever having a sex partner who was HIV-positive ... and knowing that they had a bisexual male partner" (Peterson et al., 1992).

How Does Sex With Multiple Partners and Risky Partners Increase HIV Risk?

Sex with multiple partners and partners who are at high risk increases risk of infection in the following ways:

- the probability of encountering an infected partner increases as the number of partners increases;
- condom use patterns often differentiate according to partner type (e.g., steady, casual, paying) and unprotected sex with steady partners is most common; and
- sex with a partner who engages in risk behavior increases the likelihood of their infection, thus presenting the possibility of subsequent transmission.

Who Has Multiple Partners and Risky Partners?

There is considerable data for both San Francisco and the general U.S. population regarding sex with multiple and risky partners. In a San Francisco Bay Area county survey, 16% of all men, 9% of all women, and 29% of all respondents aged 18 through 24 years were found to have had three or more sexual partners in the previous year (Trocki, cited in Leigh et al., 1993). This figure is higher than those found by Anderson and Dalhberg (1992) for the general U.S. adult population, 13% of whom reported having sex with two or more partners and 3% of whom reported having sex with five or more partners in the past year. Applying this percentage to the U.S. population total, Anderson and Dalhberg estimate that "4.8 million Americans have more than 5 partners."

National studies surveying the sexual behaviors of various groups in the U.S. report specific data for these groups. Leigh and colleagues (1993) report that 13% of White respondents in their national survey had sex with more than one partner in the past year.

Peterson and colleagues (1993) report that among the heterosexual Black respondents in their large national sample, 18% reported having two or more sexual partners in the past year. More males (30%) than females (10%) and more single (25%) than married or cohabitating adults (8%) in this sample were found to have two or more sexual partners. For these Black heterosexuals, the percentage of those with multiple partners declined slightly among those of higher income and age.

Sabogal and colleagues (1993) found that among the heterosexual Hispanics in a large national sample, 11% reported having had multiple sex partners in the past year. As with

other ethnicities, a significantly higher percentage of men (17%) than women (4%) reported having multiple partners. This is significantly lower than Van Oss Marin and colleagues' (1993) finding among their sample in which 40% of the men reported having multiple female partners in the past year. Sabogal and colleagues considered other determinants of having multiple partners such as degree of acculturation, age, marital status, level of formal education, and income. According to Sabogal and colleagues, "Acculturation into the U.S. mainstream was associated with an increase in the number of partners among both genders." Additionally, those who reported to have multiple partners "tended to be young (aged 18-29), unmarried, highly educated, and of lower income."

Grinstead and colleagues (1993) report on the sexual risk behaviors of women based on their sample from 23 U.S. urban areas. Overall, 15% of these women reported having had sex with multiple partners, a risky main partner, or both. Factors that were related to an increase in number of sexual partners include age between 18 and 29 years and more than 12 years of education. Across groups, "single women were significantly more likely to have had multiple partners than were married or cohabitating women."

Many studies report that young adults (i.e., 18-29 years) are more likely than those older than 30 years to have multiple sex partners. Binson et al. (1993) report findings from a national survey they conducted with urban heterosexual young people between the ages of 18 and 25 years. Of this large sample, 24% reported having had sex with multiple partners. In particular, they found that, "Young men are more than twice as likely as young women, and unmarried respondents are eight times as likely as married respondents, to have multiple partners." Condom use with these partners was low overall, as approximately 40% never used condoms with main or casual partners. Of greater concern, however, is the finding that condom use decreased with increasing number of partners.

Peterson and colleagues provide information on risky partners among White and Black heterosexual adults in the AMEN study. White women (17%) and men (11%) were more likely than Black men (4%) and women (5%) to have had an injection drug using partner. White women (6%) were the only group to knowingly have had a bisexual partner. All groups reported high levels of partners who had sex with multiple partners, ranging from the highest rate of 64% among Black men to 33% among Black women.

Lack of Access

The issues in the co-factor, lack of access, include knowledge of services, language, and literacy. We have dealt with these three factors together because of the common issues in all three.

Individuals and populations differ in the access they have to prevention information and education services. Those who do not have full access to prevention resources may be at higher risk for HIV infection, primarily due to lack of information about risks and how to avoid them. The specific barriers to access vary according to the population and according to the particular prevention strategy under consideration, but lack of access can be conveniently examined under three categories: poor knowledge of services, language barriers, and low literacy. These categories are not mutually exclusive, and they may overlap and interact with other co-factors such as low self-esteem, homelessness, discrimination, and institutionalization.

KNOWLEDGE OF SERVICES

A lack of knowledge about prevention services and their availability is clearly a barrier to obtaining accurate information about HIV. Prevention services comprise a variety of interventions including outreach, hotlines, peer counseling, condom distribution, and advertising in a variety of media. Many of these interventions are designed for and targeted to specific populations. To understand the lack of knowledge about prevention services, it is necessary to consider both the particular kind of intervention and the targeted population. Some populations may require very specific efforts in order to become more aware of the prevention services available, and the services themselves may have to be carefully designed to reach the population. Language, culture (or acculturation), and literacy are often important factors that limit knowledge of services, but other factors, both personal and institutional, may play a critical role.

In some situations, the same factors that limit knowledge about HIV/AIDS also limit knowledge about prevention services. The City Clinic study (1992) found racial/ethnic and education differences in knowledge about AIDS, and the authors considered that at least some of the racial/ethnic differences in knowledge were correlated with differences in level of education. It seems likely that knowledge about services may vary in the same way. Language barriers and low literacy may limit not only access to prevention services but knowledge of the existence of those services as well, and they are also associated with education and acculturation; the ways language barriers and low literacy operate as obstacles to access are discussed more fully as a separate category below.

One barrier to finding out more about prevention services is a fear of stigmatization. Such stigmatization of HIV is, at least in part, usually a result of homophobia, gender discrimination and/or vilification of IDUs within the community. In communities where the social stigma attached to HIV is particularly powerful, the ability to make inquiries anonymously is especially important. This is often true for closely knit communities; the individual may fear that even the disclosure of any interest in HIV will be seen as suspect. In these circumstances, the perception of absolute confidentiality is also very important for continuing prevention services. This fear of stigmatization is very common, but is particularly important in some Asian communities. There is fear "that any disclosure will result in community-wide disclosure of a person's most intimate, personal life. Hence many gay API

men will not disclose outwardly nor acknowledge internally behaviors that put them at risk. Out of denial, many high-risk individuals will neither acknowledge that they are at risk nor identify with a service which targets risk behavior; consequently utilization of education prevention services is low and perpetuation of risk behavior remains high." (Choi et al., 1995) In this case, a lack of acculturation and the lack of English may also be important factors in the lack of access. Peinkofer (1995) says that, due to the close knit networks in communities of the deaf, and the fear of social isolation, confidentiality is of great importance to the deaf in accessing HIV-related services. In a study of who seeks HIV testing, Paringer and colleagues (1991) found that "state policies that protect individual privacy encourage individuals to seek testing." Counseling at test sites is an important way of learning more about prevention services.

Populations that are in some way isolated from the larger society are likely to have less knowledge of HIV prevention services. Within the urban setting, there are some populations, such as some of the homeless, who avoid shelters and most other service providers; which have limited channels of communication. Some of these are homeless youth. Some people with limited physical mobility may also have difficulties in access to knowledge of some prevention services (California HIV Prevention Plan, 1995).

There may be institutional barriers which control access of a population to certain information. Thus, official policies may limit the access of in-school youth, those incarcerated in the criminal justice system, and those (such as some of the mentally ill and some of the developmentally disabled) who reside in other institutional settings. In some cases, such as those with severe mental illness or severe developmental disability, there may be limits to the individual's capacity to understand more about prevention services.

Another barrier is distrust of the service system itself. This is often associated with various kinds of discrimination. For some disenfranchised populations, the provider of prevention services is seen initially as a representative of the larger social system, which is perceived as antagonistic to their well-being. For example, some in the transgender community distrust services providers, feel misunderstood by them, and feel that providers regard transgender people as expendable. In minority ethnocultural communities, there is a common belief that HIV/AIDS is part of a genocidal CIA experiment; this is one sign both of their distrust of the service system and of the hopelessness felt in the face of overwhelming difficulties. "While beliefs about genocide are real, they may prevent persons in minority communities from making informed judgments about how AIDS is a threat to individual and community safety" (Stevenson and White, 1994).

LANGUAGE BARRIERS AND LOW LITERACY

There are very practical issues of language barriers and low literacy that concern access to prevention education and services; these issues can become very complicated in practice. Understanding of any message always occurs in a cultural context -- it is not just a question of

conceptual understanding of the content of a message, although that is extremely important. The impact of the message will also depend on whether it is perceived as relevant to the recipient and on the perceived intent of the sender. Therefore the intended recipient's perception of his or her relation with the sender is an important part of the way the message is received. There are also broader cultural issues of critical importance, such as the valuation and associations of particular risk behaviors: these may have an important impact on the way a message is received. Particularly in disenfranchised and impoverished communities, it may be important to connect HIV with other survival problems (such as lack of health care and lack of employment) that are simultaneously challenging the community. "Without a relevant context within which AIDS education can take root and grow, it becomes useless banter that will not be internalized" (Stevenson and White, 1994).

There has been a great deal of discussion about the need to make prevention education culturally and linguistically appropriate and relevant. Whether the setting is street outreach, test site counseling, or printed material, it is important that the information be provided in a way that the recipient can understand. Often this entails the use of colloquial rather than medical or technical vocabulary. The appropriate level of vocabulary may correlate with level of education and other socio-economic variables. In printed materials, this same set of considerations applies to the design of material so that it is made as appropriate as possible for the intended audience. This would include not only vocabulary but also layout, type style, and possible illustrations. In many cases, existing genres such as "tele-novela" comic books have been appropriated for prevention education (California HIV Prevention Plan, 1995).

Clearly, prevention education and services must be available in the language of the recipient in order to be understood. Many immigrants have little or no English skills; many immigrants never developed literacy in their own languages, and there are many native-born U.S. residents who have little or no literacy skills. The problems of addressing prevention interventions to adults who are not literate in any language differ from those of addressing an adult who has literacy skills in a language other than English. The problems of addressing a particular audience in culturally appropriate ways can, however, be quite complex at levels beyond questions of national language and level of literacy. Issues of trust and relevance to the target audience are often addressed by a "people like us" strategy, such as the use of indigenous outreach workers who come from the same ethnic and socio-economic background as their contacts (California HIV Prevention Plan, 1995). Pragmatic success may entail the tailoring of prevention services to narrowly targeted audiences in terms of criteria including ethnicity, language, social class, education, and sexual identity. (Choi et al., 1995).

These issues have been linked to other co-factors, such as self-esteem: "Low levels of literacy, lack of education, and language barriers can also affect a person's view of him or herself. This is because these characteristics relate to how a person functions in a society that values, and in many ways requires, a formal education and knowledge of English" (UCSF AIDS Health Project, 1995). Some research has also recognized disempowerment, for both individual and community, as a co-factor for HIV. Disempowerment in this case is

understood as a perceived external locus of control or lack of personal efficacy (Wallerstein, 1992 [cited in Choi]; Stall et al., 1988; Stevenson and White, 1994). Some prevention strategies, such as prevention case management, may aim directly at increasing the sense of personal efficacy and self-esteem. In some cultural contexts, this may be difficult because, for example, there are no non-stigmatizing terms for a gay identity.

There are other populations that lack access to prevention services because of language and literacy difficulties. For example, there is little prevention information in Braille for the blind (California HIV Prevention Plan, 1995). In a wide-ranging paper on HIV education for the deaf, Peinkofer (1994) points out that deaf people depend heavily on visual components for understanding. The appropriate interpreted lectures and captioned videos do not reach a sizable portion of the deaf. Even though many of the deaf are taught English, it is very difficult to learn without hearing the language spoken, and many of the deaf read English at an elementary school level; they may also miss concepts and idiomatic meanings that do not translate well to Sign Language. Much of the available written material on HIV prevention in English is not appropriate for deaf Americans.

How Does Lack of Access Increase HIV Risk?

Lack of access can increase risk in several ways, as outlined below:

- People cannot use services unless they know of such services.
- Some groups may be reluctant to access services for fear of stigmatization. They may fear that asking for information will entail disclosure of their sexual orientation or drug behavior.
- Some individuals distrust the service system.
- Many groups need information in a special format or language.

Who Lacks Access to HIV Prevention Education and Services?

Many of the individuals and populations that lack access to HIV prevention services are those identified by one of the other co-factors for HIV risk: the homeless, the impoverished, youth, the institutionalized, those who are the objects of discrimination, and the differently abled. Some of these are considered by service providers to be "hard to reach" populations: runaway youth; the homeless who avoid shelters; and closeted gay or non-gay-identified men who have sex with men, particularly in homophobic communities. The lack of access is associated with their isolation and/or disenfranchisement from the larger society. In some cases, as with some institutionalized populations, the lack of access is directly imposed from the outside by coercive social forces; in some cases, as with closeted gay men in homophobic communities, the lack of access is directly imposed by the subjects themselves, as a result of fear of disclosure and its consequences. Those who face systematic discrimination may generalize their distrust of the larger society to include service providers.

Exhibit 14 below is drawn from the 1990 U.S. Census data for San Francisco County. It indicates that less than 58% of the population over 5 years of age speak only English. For the age range of 5 to 17 years, there are only 48% who speak only English, compared to 59% of the population between 18 and 64 years of age. However, the younger group has only 1% who do not speak English well or at all, indicating a high level of multilingualism for that group.

The population with the highest percentage of those who speak English not well or not at all -- those least likely to have access to HIV prevention services -- are those 65 years and older. Of that group, 19% do not speak English well or at all. However, based on current AIDS epidemiology, this age range of 65 and older is less at risk for HIV infection than the range of 18 through 64; of the latter group, there are 12% who speak English not well or at all.

Exhibit 14
Persons Over Age 5 Who Speak English "Not Well" or "Not at All"
San Francisco County

Age and Language	Number	Percent
Persons 5 years and over	688,689	
5 to 17 years:	**81,479**	**12%**
Speak only English	39,227	48%
Speak Spanish	13,312	16%
Speak English "not well" or "not at all"	1,970	2%
Speak Asian or Pacific Islander Language:	25,111	31%
Speak English "not well" or "not at all"	4,246	5%
Speak other language:	3,829	5%
Speak English "not well" or "not at all"	589	1%
Total age 5 to 17 who speak English "not well" or "not at all"	**6,805**	**8%**
18 to 64 years:	**501,947**	**73%**
Speak only English	297,196	59%
Speak Spanish:	55,106	11%
Speak English "not well" or "not at all"	15,251	3%
Speak Asian or Pacific Islander language:	117,518	23%
Speak English "not well" or "not at all"	40,281	8%
Speak other language:	32,127	6%
Speak English "not well" or "not at all"	3,519	1%
Total age 18 to 64 who speak English "not well" or "not at all"	**59,051**	**12%**
65 years and over:	**105,263**	**15%**
Speak only English	60,173	57%
Speak Spanish:	7,515	7%
Speak English "not well" or "not at all"	2,908	3%
Speak Asian or Pacific Islander language:	25,302	24%
Speak English "not well" or "not at all"	14,939	14%
Speak other language:	12,273	12%
Speak English "not well" or "not at all"	2,525	2%
Total over 65 years who speak English "not well" or "not at all"	**20,372**	**19%**
Total population, over age 5, that speaks English "not well" or "not at all"	**86,228**	**13%**

SOCIAL/SITUATIONAL CO-FACTORS

There are factors in social or cultural groups that may increase risk for HIV, such as low perception of risk or discrimination. Additionally, certain situational factors, such as incarceration, may increase risk. This section describes three examples of social/situational co-factors: incarceration, low perception of risk, and discrimination.

INCARCERATION

Incarceration and other forms of institutionalized living create unique conditions which may increase HIV risk. This sections discusses these conditions and other factors that may increase HIV risk for incarcerated people. Other forms of institutionalization such as residential drug or psychiatric treatment are not specifically addressed; however, some of the same issues apply and may be extrapolated from the following discussion.

What Is the Connection Between Incarceration and HIV Risk?

There is evidence that AIDS is becoming the leading cause of death in U.S. prisons (Gellert et al., 1993). Rates of HIV seropositivity among prison inmates range widely according to geographic location and often reflect local epidemic trends. In an extensive study of California inmates (Singleton et al., 1990), blood samples collected for other purposes were blindly tested for HIV antibodies. This study found an overall seropositive rate of 2.6% (2.5% for men, 3.1% for women). Among males, rates were significantly higher for those in the San Francisco Bay Area (5.3%) as compared with those in southern (1.9%) and central California (1.2%).

HIV seropositivity rates for prison inmates in other U.S. states also differ significantly. Epidemiologic studies in 10 states (Indiana, Iowa, Maryland, Michigan, Mississippi, New Mexico, New York, Oregon, Tennessee, and Wisconsin) reported a range of HIV infection from 0% to 18.9%, with Maryland (15.4% for men and 7.0% for women) and New York (17.4% for men and 18.9% for women) having the highest rates (Singleton et al., 1990).

The high rates of HIV seropositivity among people entering the criminal justice system pose a threat of infection through unsafe sexual and injection drug use practices to others who are incarcerated. Unique patterns of prison inmate mobility, e.g., restricted mobility within a particular institution and frequent transience between institutions, create a closed pool of infection for those within the system. Furthermore, many people involved in the criminal justice system experience more than one episode of incarceration, and therefore periodically re-enter the community (Gellert et al., 1993). In this manner, the otherwise closed pool of infection within the system opens to those in outside communities.

HIV risk among incarcerated populations is primarily discussed in the literature as a correlate of the rate of injection drug use among people in the criminal justice system. Although epidemiologic studies point to pre-incarceration injection drug use as the primary venue of infection for inmates (Behrendt et al., 1994), high rates of injection drug use have also been reported during incarceration. According to the Centers for Disease Control and Prevention (1992), "A report by the National Institute on Drug Abuse indicated that, based on a study during 1987-1989, approximately 83% of injection drug users reported having been in jail or prison at some time." Additionally, the California HIV Prevention Plan (1995) reports that "One focus group held in San Quentin Prison by the Marin County AIDS Project in October 1993 found that between 7% and 10% of inmates continue to inject drugs while in prison." It is unlikely that prisoners who inject drugs use clean needles consistently (California HIV Prevention Plan, 1995).

Just as drug use continues in many prisons, so does sexual activity. Incarceration restricts potential sexual partners to other inmates, thus contributing to situational homosexuality (Singleton et al., 1990). For example, in a Tennessee study of prison inmates by Horsburgh et al. (1990), 17% of inmates reported homosexual activity while incarcerated. Condom availability in prison systems is a concern, although the San Francisco correctional system has been a leader in this respect. Consenting sexual activity is assuredly risky if condoms are not available. Rape in prison settings also occurs and the predatory approach to sexual encounters that some prisoners take fuels violent behavior. Thus, the risks associated with rape discussed in a previous section apply.

High rates of non-injection drug use among those in the criminal justice system may also increase risk for HIV infection. In a large study of women inmates in New York City, Magura et al. (1993) found that 65% reported using crack and 52% reporting drinking alcohol in the 30 days prior to incarceration. Additionally, the National Commission on AIDS (1991) reported that 47% of 262 young people incarcerated in Los Angeles drank alcohol in situations that led to unprotected intercourse. With the passage of the "Three Strikes" law in California, the number of long-term prison inmates arrested for substance-related offenses can be expected to increase (Pappas, 1995).

How Does Incarceration Increase HIV Risk?

Incarcerated populations are at increased risk for HIV infection because:

- Many characteristics of incarcerated populations, especially pre-incarceration injection drug use, increase the rates of HIV infection among those entering the criminal justice system. Unsafe injection drug use and sexual activity increase the possibility that other inmates become infected.
- Inmates' sexual activity is restricted, and situational homosexuality occurs in prisons. The forced nature of some sexual encounters in prison may increase risk of HIV infection.

- Access to prevention materials and education is inconsistent across the country's criminal justice system. California is a leader, however, with 45 HIV counseling and testing sites and five HIV health education/risk reduction programs in correctional facilities (Centers for Disease Control and Prevention, 1992).
- The transient and episodic nature of incarceration creates a unique pattern of possible transmission among inmates and from parolees to other community members.

How Many Parolees and Currently Incarcerated People Are in San Francisco?

According to the California Department of Corrections, there are approximately 2,454 parolees living in San Francisco, and 90% of these are male. Exhibit 15 presents current data on certain demographic charcteristics of the incarcerated population. As with parolees, San Francisco inmates are primarily male (90%). People of color are disproportionately represented among the prison population as compared to their representation in the general San Francisco population.

Exhibit 15
San Francisco County Jails
Incarcerated Population Demographics

Average Daily Census	n=2,400
Demographic characteristic	
Gender	
Male	90%
Female	10%
Ethnicity	
African-American	50%
Hispanic	27%
White	19%
Asian	2%
Native American or Samoan	1%

Source: SF County Sheriff's Department

According to the most recent census, there are 124 boys and 25 girls currently detained at San Francisco's Youth Guidance Center (YGC). In addition to the youth detained at YGC,

The notion that certain groups are not at risk because AIDS is a White homosexual disease is exacerbated by the underreporting of AIDS cases among certain groups. Underreporting is a greater problem among Asian/Pacific Islanders (Choi et al., 1995) and Native Americans (Multicultural Liaison Board/Office of AIDS, 1994). For example, studies by the CDC in Los Angeles and Seattle confirm that, in those two cities at least, Native American AIDS cases were misreported as White or Hispanic in 50% to 75% of the cases (Rowell, in press).

Another factor that may influence perception of HIV risk is the presence of other risks; that is, HIV risk may seem low when compared to other, more immediate risks that many in poor communities face (Battle, et al., in press). For some, their "life reality is that of being poor, Black, Latina, or outside the law through drug abuse or street prostitution, they have always lived with risks of some kind. AIDS is simply one more risk with which to be concerned" (Mays and Cochran, 1988). "The key to poor ethnic women's response to AIDS is their perception of its danger relative to the hierarchy of other risks present in their lives and the existence of resources available to act differently" (Mays and Cochran, 1988).

The level of acculturation may also influence perception of risk. Latina women who are less acculturated reported a significantly lower perceived risk of AIDS compared to highly acculturated Latinas, and their behaviors indicated that they were in fact at lower risk. However, less acculturated Latinas may actually be at greater risk than their relatively safe behavior would suggest. While highly acculturated Latina women appear to be somewhat at risk for HIV, via both injection and non-injection drug use and sex with multiple partners, less acculturated Latinas are more likely to contract HIV infection through their husbands or partners (Nyamathi et al., 1993a).

How Does Low Perception of Risk Increase HIV Risk?

Lower perception of risk correlates with involvement in high risk-activities. Persons who do not feel threatened by HIV are unlikely to take precautionary measures. Further, among some groups, there remains a belief that HIV is a White gay disease that cannot harm them. The underreporting of cases in some communities increases the perception that these communities are not at risk. Additionally, in many communities, particularly poor communities, the risk of HIV seems low when compared with the presence of many other risks.

Who Has Low Perception of Risk?

To answer this question would require a thorough needs assessment that compares perceptions of risk across the many cultures present in San Francisco. Such a comparison would need to occur among the sub-populations or groups within these cultures, including gays and bisexuals, transgender persons, heterosexual women and men, and young people. Further, distinctions would need to be made based on characteristics such as level of acculturation,

substance use patterns, and class. Our preliminary examination of the literature indicates that for the following groups this co-factor is of relevance:

American Indians and Asians/Pacific Islanders;
Latino/as;
African Americans; and
Especially women in these cultures and those adhering to traditional values.

DISCRIMINATION

Discrimination is a harsh social condition with which many individuals and groups in the U.S. must constantly struggle. Discrimination, or stigmatization, refers to socially defined patterns of prejudice and rejection. An individual or group experiencing discrimination is "discounted, discredited, or rejected by another individual or group, generally for ways in which that individual or group does not conform to a certain set of social standards or expectations" (Public Media Center, 1995a). Discrimination can manifest in many ways, including exclusionary laws, attitudes or public opinions and violence (even murder). In the U.S., discrimination particularly occurs along lines of race/ethnicity, gender, gender identity, sexual orientation, age, and physical and mental ability.

Because of its complex nature, discrimination has not yet been studied in terms of its association to HIV risk. Therefore, in this section we will describe how traditionally marginalized communities experience discrimination and delineate possible influences on risk for HIV infection.

Racism

Racism is a pervasive social norm in the U.S. and is the root of many severe conditions for people in communities of color. Racism is a powerful determinant of the economic, political, and social situations of people in these communities.

Racist economic policies and practices explain to a large extent the disproportionate representation of people of color among the poor. Such policies and practices often determine how resources will be allocated for necessary services, such as health care and other social services. Similarly, community development policies are influenced by racism, such that neighborhoods in which communities of color predominantly reside are often left with insufficient support. In the absence of such support and resources, these areas become impoverished. In previous sections, we have described how residence in poverty areas and living in poverty in general are known to reduce health outcomes in general and increase HIV risk in particular.

Among many communities experiencing racism, there is often suspicion and mistrust toward the dominant, White culture. Racist actions on the part of the government, researchers

and service providers have historically provided firm grounds for this mistrust. This sense of mistrust can have an important effect on HIV prevention. If people in communities of color do not trust providers, then it is unlikely that they will be receptive to health and prevention messages.

To illustrate, a 1994 survey of AIDS prevention providers in minority communities indicates that mistrust was among the top four barriers to prevention, along with lack of funds, cultural insensitivity, and denial. These results were essentially uniform among those working in the African-American, Latino, and Asian/Pacific Islander communities (Stevenson and White, 1994).

A specific historic event underlies the mistrust that many African-Americans feel toward public health messages. From 1932 to 1972, U.S. Public Health Service conducted the Tuskegee Syphilis Study, in which researchers observed approximately 400 poor, Black sharecroppers with syphilis to learn about the untreated disease's progression. Although penicillin was found to be an effective and inexpensive syphilis treatment in 1946, the U.S. government withheld the drug from those in the study for 26 years to continue their observations. The scandal was uncovered in 1972, but by that time 20% of those in the study had died of syphilis (Chavez, 1995; Quinn, 1993).

Other groups carry a mistrust for government and public health agencies based in historical mistreatment, as well. Native Americans in the 19th century were recipients of a government distribution of blankets infected with small pox. Asians in San Francisco point to the early 1900's, when the bubonic plague in San Francisco's Chinatown went unchecked by the public health department until Whites in nearby neighborhoods became infected. All ethnic communities can relate more examples of policies and practices that incite suspicion and mistrust for White-dominated government and culture.

Cultural insensitivity, a more subtle form of racism, is a primary reason for the insufficiency of services that are culturally and linguistically appropriate for all communities of color. A Eurocentric approach to prevention often results in ineffective interventions for these communities. For example, Airhihenbuwa et al. (1992) state that there is a "perception that AIDS education is being imposed on the African-American community by the White majority culture". Similarly, the Multicultural Liaison Board, in its report to the state Office of AIDS in 1994, noted that there is a lack of peer educators reaching African-American target groups. They further state that the "multi-cultural" approach to AIDS education -- as opposed to specific Afro-centric strategies -- most often fuels tokenism. Tokenism is typically an ineffective approach, because it leaves the responsibility for accomplishing "cultural sensitivity" to a single provider or program and does not address the larger service delivery context.

Beyond culturally sensitive prevention and treatment approaches, many communities of color lack full access to health and human services. This lack of access to services is also

partly due to racism and is commonly discussed in the research literature and among providers. Racism and its concomitant economic disparity may have indirect effects on access, as well. For example, the barrier of inadequate transportation to certain types of HIV interventions is greater for those living in poor neighborhoods.

The recent passing of the California initiative Proposition 187 clearly illustrates how racist policy can affect health. The application of Proposition 187 not only denies immigrant Latinos and Asians the services they need, but also impacts many people of color who are here legally. Restricting access to health and other social services limits the distribution of HIV prevention information and materials, thus increasing risk for infection.

Homophobia

Like racism, homophobia is a rampant force that serves to maintain difficult psychological, economic, political and social realities for gay, lesbian, and bisexual people — as well as for those questioning their sexual orientation or for those who simply do not seem to conform with heterosexual norms of behavior and appearance. Homophobia dictates the "morally disapproving, personally rejecting, and ambivalent" attitude towards gays. San Francisco, a city known as a haven for homosexual and bisexual individuals, is not immune to the social rule of homophobia.

Homophobia is primarily responsible for the inadequate initial response to the AIDS epidemic, and likely fuels those forces that continue to decrease resources allocated for AIDS-related issues. Throughout the early 1980's, this society's general fear and dislike of homosexual groups sustained a collective denial (on the part of the government, public health service, and private researchers and providers) of the epidemic's gravity. As explained in "The Impact of Homophobia and other Social Biases on AIDS":

> The phenomenon of HIV/AIDS is unique in the American experience because even as it has represented a clear and overwhelming threat to our public health and our national stability, it has simultaneously received less public attention and a more ambivalent government response than any public emergency of a comparable dimension in our century (Public Media Center, 1995a).

Such ambivalence and denial, based on homophobia, has had clear implications for the allotment of resources for HIV prevention and treatment services.

Homophobia may particularly affect young gays and lesbians. Establishing a strong and healthy sense of one's personal identity is severely problematized for homosexual/bisexual/& questioning youth, as a result of institutionalized homophobia. Gay/lesbian/bisexual/questioning youth must navigate through already difficult developmental stages and confront the additional barriers placed by a society which disparages and oppresses

them. These barriers create stresses which alter the process of identity development, and to that extent they influence risk for HIV infection (Health Initiatives for Youth, 1995).

The stresses created by homophobia for identity development among gay/lesbian/bisexual/questioning youth are cognitive, emotional, and social. Gay/lesbian/bisexual/questioning youth often feel socially isolated, which leads to feelings of personal alienation and despair. In response, they may avoid services and internalize feelings of self-hate and self-destruction. These feelings are the basis for such behaviors as suicidal ideation and attempts, alcohol and substance abuse, and clandestine sexual contacts (Grossman, 1994). Self-destructive behavior in general and substance use (especially injection drug use and drug use during sex) in particular increase risk for HIV infection. Clandestine sexual encounters often involve prostitution or other circumstances which make safe sex practices difficult.

AIDS-related stigma has been closely linked to homophobic attitudes. One study points out that people are more likely to scorn gay men with AIDS and to blame them for their illness. For example, "studies in which respondents are asked to react to a hypothetical person — with the person's medical diagnosis and sexual orientation systematically varied — have consistently shown that people with AIDS were evaluated more negatively than were persons with other illnesses, and that these evaluations were most negative when the person with AIDS was a gay man or contracted HIV through male-male sex" (Herek et al., 1995).

Although HIV/AIDS has been associated with numerous so-called risk groups, the public has fixated on the disease's connection to gay and bisexual men. Research has shown that "this is not due to the fact that the majority of AIDS cases have continued to occur among drug-using and non-drug-using gay and bisexual men, but rather 1) since the first weeks of the epidemic, when the disease was named Gay-Related Immune Deficiency, AIDS has been inextricably associated in the public consciousness with widely ostracized gay and bisexual populations and behaviors; and 2) that this perception coincides with an underlying prevalent homophobia that permeates virtually all social attitudes toward sexuality and sexual behavior in this nation" (Public Media Center, 1995a).

Homophobia is especially problematic in relation to HIV/AIDS. Unlike racism and sexism, for example, homophobia has never been directly addressed in the public dialogue. As the Public Media Center report continues, "a social consensus condemning homophobia has never been formed in the same way that a consensus has been formed condemning racism, sexism, and other forms of discrimination in American society....Extensive evidence also points to the fact that because the association between HIV/AIDS and homosexuality is so strongly fused, it can significantly impair or block the ability of non-gay individuals to personalize the concept of HIV/AIDS risk, even if they themselves are at high risk of HIV infection" (Public Media Center, 1995a).

Biphobia

Biphobia refers to the unique forms of discrimination that bisexual communities experience. This discrimination is enacted primarily through the rejection of bisexual people from lesbian, gay and heterosexual communities. This exclusion extends from fears of bisexual sexual behavior, which includes, but is not limited to, homophobia. Lesbian, gay, and heterosexual communities have attempted to deny validity to bisexual identities because of the threat bisexuality poses to the stability of their sexual identities.

Myths regarding bisexual communities contribute to misunderstanding, particularly with regards to the HIV/AIDS epidemic. Identifying as bisexual is often misinterpreted as synonymous with promiscuity and an inability to be monogamous. These stereotypes have led to the persecution of bisexual people as vectors of HIV infection by gay, lesbian, and heterosexual communities. Such persecution, particularly perpetrated by the media in the early years of the epidemic, has established the perception of bisexual people as "high risk" by virtue of their identity.

Bisexual people face significant barriers to receiving HIV prevention messages and services. Most prevention messages only address people's sexual behavior with a single gender and target either gay and lesbian or heterosexual groups. These prevention messages are not appropriate for bisexual people who may engage in sexual behaviors with more than one gender group. In group settings, bisexuals are usually treated as gay, lesbian, or heterosexual, thus denying attention to their specific prevention needs. Acknowledging these issues and behaviors in group settings could be an important intervention. Inclusive and comprehensive prevention messages which address a variety of sexual behaviors and orientations will not only benefit bisexual-identified people but also others who may engage in a range of sexual behaviors with more than one gender group.

Gender Identity/Transphobia

Transgender communities are the least understood, and thus suffer from the most intense discrimination. They are frequently derided in popular media, and are given little attention by HIV/AIDS education efforts. The paucity of information and attention to special needs perpetuates fear, misunderstanding, and most importantly, a degree of HIV risk and infection in these communities.

In San Francisco, where members of the transgender community have consistently struggled to be included in the planning and decision-making processes that affect them, "gender identity" was made a legally protected Human Rights Commission (HRC) category only recently, in January 1995. Now that gender identity is a legally protected category, the HRC is authorized to document and investigate discrimination complaints made by transgendered people. This was the direct result of extensive grassroots community organizing

efforts by transgender groups. San Francisco is one of the only cities in the country to legalize this recognition (Boylin, 1995).

A discriminatory social climate also affects a lack of specific, sensitive health care for transgendered people. This lack, coupled with community mistrust of medical providers, may lead to low rates of HIV-related service usage. Additionally, stigma and lack of knowledge about transgendered people places them at a low priority for medical and other service providers. The special needs of transgendered people, particularly for those who are HIV-infected, continue to go unmet.

Discrimination creates significant barriers for transgendered people who want to maintain or seek regular employment (Boylin, 1995). As a result, many members of the transgendered population are compelled to work in the sex industry for subsistence. As discussed in another section, involvement in commercial sex work increases risk of HIV infection for many reasons.

As with all communities who experience discrimination, low self-esteem among transgendered people is an issue which affects behavior. Low self-esteem is closely related to substance use/abuse, involvement in abusive relationships, and other self-destructive behaviors. Low self-esteem also makes continual application of safe sex practices difficult (California HIV Prevention Plan, 1995).

Sexism

The patriarchal basis of U.S. culture serves to define power distinctions along gender lines. Thus, women experience discrimination in all social arenas, including economic, political, and personal life. Just as discrimination presents barriers to self-development in general and self-protection in particular for other groups, it carries these issues for women's health development.

The female-male power imbalance has important implications, especially in heterosexual sexual relationships. Safe sex can be difficult, and requires communication and negotiation between partners. If there is either a perceived or actual power imbalance, it is likely that women will feel unable to insist that their male partners use condoms. This dynamic removes control over self-protection for women.

Other issues may compound the difficulty many women experience in negotiating sex or condom use with their partners. Airhihenbuwa et al. (1992) explain that, regarding African-American women and the inability to negotiate condom use, "it is necessary to understand the larger context of the economic security, sex-ratio imbalance, and meaning of sex."

Poor women may have additional barriers: "For an indigent African-American woman, the role of sex may be seen as a barter in exchange for the financial support of a male partner. A woman may place more value on securing food and shelter for herself and children than on practicing safer sex" (Airhihenbuwa et al., 1992). "For poor women, sex may function as a source of employment, a method for establishing ownership or proprietary rights in a relationship, or as a means of acquiring much needed tangible or emotional support." Under these circumstances, negotiating condom use may be ineffectual. (Mays and Cochran, 1988).

A small subset of women experience physical and verbal abuse in response to requests for their partners to use condoms (Mays and Cochran, 1988). "Moreover, negotiating condom use with a sexual partner often translates to promiscuity and is extremely pejorative. If a woman asks her male partner to use a condom, she is implying either that he has been immoral or that she has been immoral. If she implies that she has been sexually permissive, she may risk rejection from her male partner; if she implies that he has been sexually permissive, she risks his anger and outrage" (Airhihenbuwa et al., 1992).

The discussion above gives the impression that people are bound by culturally-based gender roles in their selection of partners, discussions of sex, and use of condoms. However, Kline et al. (1992) conducted extensive qualitative research among women in methadone programs and partners of IDUs and found that "their attitudes were typically not congruent with traditional gender role characterizations of the submissive, dependent, self-sacrificing woman. On the contrary, participants expressed a remarkable degree of independence in their relationships with men. This was reflected, in part, by their willingness to relinquish those relationships if they found them no longer satisfying or productive. In general, women were reluctant to maintain relationships with men who could not function as responsible partners or role models for their children" (Kline et al., 1992).

As explained by Herek et al. (1995), "in the history of the AIDS epidemic, cultural sexism has interacted with AIDS-related stigma to make women with AIDS one of the most invisible groups among PWAs in the United States". The interaction of AIDS-related stigma and cultural sexism has had at least three important effects. First, official criteria for a diagnosis of AIDS have excluded many of the symptoms exhibited by women with HIV. Symptoms that might be specific to women, including cervical cancer, were not included in the official CDC definition of AIDS until 1993, precluding early detection and appropriate medical attention for women with AIDS." Second, prevention and treatment programs that recognize women's unique needs have been lacking. Third, women have been considered primarily as vectors of HIV rather than persons with AIDS who need treatment. Public policy has reflected less concern about the well-being of women than the welfare of those who are likely to be infected by women as 'vectors,' namely, babies and heterosexual men.

Much of the public debate concerning women and AIDS has focused on issues such as mandatory testing of expectant mothers and prostitutes. Although many more women than

children have been infected with HIV, a disproportionate amount of the public policy and scientific literature about women and AIDS has focused on pediatric concerns. Given the dearth of information on women and AIDS in general, focus on such issues as mandatory testing of mothers and prostitutes sends women the message that they are dangerous vessels of infection, and that their privacy rights are not valued as highly as the protection of 'potential victims' (Herek et al., 1995). Focusing on women as vectors for HIV transmission detracts much needed attention from developing effective HIV prevention strategies to save women's lives.

Ageism

Generally, ageism refers to any form of discrimination based on one's age. Traditionally, people at the extremes of the age spectrum -- young people and the elderly -- are those who experience such discrimination. However, we choose to focus here on issues of discrimination that young people face, given that HIV risk behaviors are disproportionately seen among adolescents and young adults, as compared with the elderly.

For the most part, legal minors are systematically denied access to services without adult consent. This poses a serious barrier to their accessing HIV prevention information, materials, or testing services. Such laws, intended to "protect" young people from sexually explicit messages, backfire in the arena of HIV infection.

Many San Francisco youth learn about HIV prevention in school. While in-school HIV/AIDS prevention education is mandated by legislation, the fact remains that the specific form that education must take is not explicitly defined, nor is the length of school-based HIV prevention intervention sessions thought by many to be sufficient both to inculcate and to reinforce effective behavior-related messages. Furthermore, teachers require no specific training to deliver HIV/AIDS education. As explained by a Long Beach community member, "I did learn about AIDS in Health, but I learned more about the dangerous effects of not wearing a seat belt." (California HIV Prevention Plan, 1995).

In addition to these limitations, relying on schools to provide HIV/AIDS education misses out-of-school youth. Out-of school youth are very difficult to reach with prevention messages and must be accessed within the context of specific health or social service interventions, such as street outreach programs. The importance of such programs must be emphasized, as these youth are often at highest risk.

A primary barrier to successful HIV/AIDS education for youth is the exclusion of young people from the process of developing HIV/AIDS education materials. Additionally, youth peer educators are rarely employed to disseminate information and support. Many of the materials and programs geared towards youth are not responsive to the specific developmental needs of young people, or not knowledgeable or respectful of the specific

vernacular of young people and of the ethnic, cultural, language, economic, sexual and gender background of specific youth audiences (California HIV Prevention Plan, 1995).

Ableism

Discrimination based on physical and mental capability is evident throughout our social and political worlds. A "survival of the fittest" mentality validates exclusionary practices that deny the physically and developmentally disabled access to employment and other opportunities. Such treatment only adds to the difficulties that many disabled people experience in their day-to-day lives. Valuing the disabled's unique perspective on life and coping is an important step in understanding their contribution to diversity.

Society's ignorance of the disabled community is apparent in the dearth of empirical information concerning their health and needs. This lack is the key barrier to effective and comprehensive HIV prevention efforts on their behalf. Without sufficient, quality data regarding the heterogeneity of these communities, the overall complacency concerning their condition, and their risk for HIV infection in particular, is perpetuated.

A comprehensive HIV/AIDS prevention plan must include provisions for the special needs of disabled communities. For example, HIV prevention messages require special formatting to meet the needs of the deaf (Peinkofer, 1994) and blind, and innovative education programs must be designed for the developmentally disabled.

Substance Use

Discrimination against substance users is common in public policy and reflects generally held social norms. People who use substances are consistently seen as at fault for their use and addiction. This victim-blaming mentality taints the debate among policy-makers regarding whether substance users should be considered "disabled." If substance use in general, and addiction in particular, were considered a disability, people with substance use addictions would be entitled to the same civil protections as others.

Discrimination based on substance use is institutionalized through policies such as the Reagan Administration's "Drug Free Workplace" program. According to this policy, substance users are denied certain rights in the workplace by virtue of their use (Pappas, 1995). Similarly, discriminatory policy is evident in the resistance to needle exchange programs, despite documentation of their effectiveness as an HIV prevention strategy (Pappas, 1995). Community norms view outreach to drug users as a tacit approval or encouragement of substance use (California HIV Prevention Plan, 1995).

Criminalizing substance use fuels a cycle whereby users find themselves in increasingly difficult circumstances, with greater barriers to getting assistance. Problems with housing, medical care and employment can be traced to the criminalization of substance use and the

denial of social services. Many people who have a legal record documenting a substance-related offense are repeatedly denied employment (Pappas, 1995).

Because of the discrimination and stigmatization that exists for drug users, many drug users feel mistrust of AIDS educators, are wary of law enforcement, and try to hide use from family and friends. They may not self-identify as drug users and thus may not seek out the education and support they need to effect long-term behavior change to reduce HIV risk. Additionally, the prohibition on needle exchange programs may keep injection drug users from obtaining clean needles. All of these factors make it difficult for AIDS educators to contact and identify drug-using populations (California HIV Prevention Plan, 1995).

Significant barriers exist for HIV prevention when HIV outreach workers are not sensitive to the cultural and social milieus of the particular substance abuse community with which they are working, or when they do not understand that HIV and AIDS risk is only one factor in a complex range of problems facing injection drug users. As Lurie and Reingold (1993) explain, AIDS has most severely impacted disadvantaged segments of U.S. society, and lack of education and lack of financial resources make it more difficult to build the skills and self-confidence that injection drug users need to avoid HIV infection.

The "multiplier effect"

It is important to consider that discrimination does not occur in discrete categories, as we have described above. People who are members of more than one of the groups which traditionally experience discrimination face a "multiplier effect". For example, African-American women struggle with the double burden of racism and sexism, and a young gay Asian man grapples with racism, homophobia and ageism. The multiplier effect requires HIV prevention services that are designed with the larger social context of people's lives in mind.

Trends in discrimination

The Public Media Center's telephone survey of 73 prominent HIV/AIDS leaders and researchers questioned respondents about trends in discrimination among people with AIDS. These trends likely hold true for groups at risk for HIV infection, as well.

- Many respondents perceived the problem of anti-gay prejudice to be getting worse. Among segments of the population in which anti-gay prejudice has become socially unacceptable, it has not disappeared; instead, it has merely assumed new, more covert forms.
- Those with expertise on substance abuse and racial/ethnic HIV issues reported less progress in addressing the problems.
- Those with expertise on women's HIV issues tended to feel that some progress had been made.

- Many respondents argued that problems have worsened for women of color. Respondents pointed to the pervasiveness of poverty, racism, and lack of access to health care within this population.
- Respondents indicated that HIV stigma and discrimination owing to racial bias have not decreased at all, and many long-standing racial problems have, in fact, been fueled by the HIV epidemic (Public Media Center, 1995b).

Discrimination remains an issue that affects increasing numbers of people in the ever-diversifying world. Given that many communities disproportionately affected by HIV/AIDS are discriminated against in larger social contexts, providers in these communities must be aware of the economic, political, social, and personal effects of discrimination. Community and individual empowerment are necessary to counter these pervasive forces and maintain energies to intervene most effectively in the HIV prevention arena.

Summary of Co-factors

The following is a brief summary of the co-factors contained in this chapter.

STDs:

The presence of a genital STD increases risk for HIV. Other STDs may increase risk, and even a history of an STD is associated with increased risk or infection in many studies.

Poverty:

Poverty is associated with increased risk and infection, largely because of its connection with increased likelihood of substance use and commercial sex work. Perhaps, too, the poor nutrition concomitant with poverty may have a biological effect.

Homelessness:

Information about poverty applies to homelessness, as well. Additionally, incidents of forced sex, impaired mental health status, and debilitated health are issues of concern for members of this population.

History of Child Abuse:

A number of studies show an association between history of child abuse and HIV infection, due perhaps to a high prevalence of drug use, prostitution, multiple partners, and chronic depression.

Abusive Relationships:

Many in abusive relationships are survivors of childhood abuse, so the issues are similar, with the addition of a present threat of violence which makes condom negotiation less possible.

Rape:

Since rape occurs usually without condoms, some risk may exist; however, rape does not appear to be independently associated with HIV infection.

Social Support:

The association between social support and HIV is weak. It may be stronger among those of moderate or higher socio-economic status, but has contradictory influences, or even negative influences, on risk for many vulnerable populations such as the poor, drug users, and homeless women.

Mental Health Stressors

Behaviors known to be associated with certain psychological disorders may increase risk of infection, including hypersexuality, poor impulse control, self-destructive

behavior, impaired judgment, and substance use. Additionally, several studies have found an association between depression and involvement in high risk behaviors.

Substance Use/Abuse:

The association is not so much with general substance use or a history of substance use/abuse, but with substance use during sex. Crack and poppers have pronounced influences on risk.

Commercial Sex Work:

Commercial sex workers face considerable risk for HIV, due to high numbers of contacts, high prevalence of STDs, and high rates of substance use/abuse.

Multiple Partners/Risky Partners

People who have sex with multiple partners may be at greater risk for HIV infection than those who have sex with a single partner because the probability of contact with an infected individual increases as the number of partners increases. Persons with risky partners also may be at increased risk for HIV if protection is not consistently used. Some people may assume that they are not at risk, not knowing that their partners are engaging in high-risk activities.

Lack of Access:

Knowledge of services and prevention services in a language and manner suitable to the audience are fundamental to effective prevention, although, strictly speaking, no studies were found to show a statistical association.

Incarceration:

High rates of HIV seropositivity among people entering the criminal justice system pose a threat of infection through unsafe sexual and injection drug use practices to others who are incarcerated.

Low Perception of Risk:

Perception of risk for HIV is a necessary precursor for risk reduction behaviors.

Discrimination:

Because of its complex nature, little is known of the statistical association of discrimination and HIV risk, but these issues are critical considerations in the provision of prevention information.

APPENDICIES

Appendix A

1) SF HPPC Priority-setting Matrix
2) Calculations Used to Derive Estimates in the Phase I Matrix
3) Information Gathered on Frequency of Risk Behaviors
4) References

Appendix B

Estimates of Relative Risk and Infectivity Rates

Appendix C

Estimates of the Frequency and Relative Risk of Behaviors Among Transgender Persons

APPENDIX A

SAN FRANCISCO HPPC PRIORITY-SETTING MATRIX

San Francisco HIV Prevention Planning Council
Priority-Setting Matrix
1995

	Phase I															Phase II				
Relative Risk	12	9	3	2	2	1 5	1	1	0 5	0 5	0 1	0 1	0 1	0 002	0 001					
	Sharing Unsterile Needles	Anal Receptive Intercs	Vaginal Receptive Intercs	Anal Insertive Intercs	Vaginal Insertive menses	Vaginal Insertive Intercs	Giving Fellatio	Giving Cunnlgs menses	Giving Cunnlgs	Other Blood to Blood	Getting Fellatio	Getting Cunnlgs	Sharing unclean sex toys	Vag to Vaginal menses	Vaginal to Vaginal	Total Phase I	Prev	Pop Size	Pop Score	Phase II Total	Rank
MSM-IDU	70 840	24 216		18 36			30 30			24 12	30 3		35 3 5			1141	54 71%	2.250	2	1,476 04	1
MSM/F-IDU	75 900	7 63		18 36	3 6	21 31 5	13 13	3 3	20 10	7 3 5	16 1 6		22 2 2			1070	48 53%	750	1	519 27	2
MSM		21 189		21 42			9 9			21 10 5	37 3 7		35 3 5			256	44 99%	41.250	3	347 82	3
MSM/F		21 189		21 42	3 6	21 31 5	9 9	3 3	20 10	21 10 5	37 3 7		22 2 2			307	33 45%	13,750	3	307 97	4
FSM-IDU	40 480	6 54	77 231				48 48			6 3		35 3 5	15 1 5			821	12 15%	3,300	2	199 50	5
MSF-IDU	36 456			6 12	12 24	62 123		6 6	41 20 5	2 1	42 4 2		22 2 2			649	13 96%	8,500	2	181 17	6
FSF/M-IDU	40 480	10 90	50 150				26 26	16 16	100 50	14 7		100 10	64 6 4	16 0 03	100 0 1	636	12 00%	625	1	100 26	7
FSF-IDU	40 480							14 14	94 47	12 6		94 9 4	124 12 4	14 0 03	94 0 094	569	4 35%	575	1	24 75	8
FSF/M		9 81	46 138				24 24	16 16	100 50	14 7		100 10	64 6 4	16 0 03	100 0 1	333	0 61%	15,750	3	6 09	9
FSM		6 54	62 186				33 33			6 3		37 3 7	15 1 5			261	0 19%	285.049	4	2 14	10
MSF				8 16	10 20	66 99		6 6	41 20 5	2 1	43 4 3		15 1 5			166	0 09%	252.544	4	0 61	11
FSF								14 14	94 47	12 6		94 9 4	124 12 4	14 0 03	94 0 094	89	0 08%	14,550	3	0 21	12

CALCULATIONS USED TO DERIVE ESTIMATES IN THE PHASE I MATRIX

Average annual frequency of the various risk behaviors for each behavior group came from a variety of sources. In most cases research data did not present risk behavior in terms of actual number of times per year that individuals engaged in these behaviors. Several methods were used to calculate average frequency depending on how the information was presented. Sometimes behavior data only reported the percentage of the population that engaged in certain behaviors. Other times, the information (particularly for condoms use or needle sharing) was presented in terms of "always, sometimes or never" engaging in self-protective behavior. For some behaviors, a combination of several research studies informed the estimated frequency. Finally, in some cases, no information was found, requiring rough estimates to be made.

It is important to note that all frequencies presented in the priority setting matrix are in fact, estimates. This should not suggest that the matrix is not valid. The main reason for this lies in the relative sensitivity of the matrix. In other words, for behaviors where the relative risk is 1.5 or less, variations in the frequency of behavior have very little impact on the group's final score. For example, increasing or decreasing the average number of times per year that members of a group perform cunnilingus, with a relative risk of 0.5, does little to change that group's overall score or priority ranking. Thus, the matrix overall is not sensitive to differences in the average annual frequencies for these behaviors with low relative risk scores.

As mentioned above, much of the data was presented in a never-sometimes-always format. In these cases, a consistent way of calculating actually frequency was used. For behavior groups where an average frequency of unspecified "sex" has been estimated, calculations are performed to obtain the frequency of specific sexual behaviors. When data on specific sexual behavior are presented as the percentage of the population who engages in that behavior the calculation is as follows. Imagine that there are 100 people, and 25% of the people "never" engage in the behavior, 50% "sometimes" do, and 25% "always" do. If the average frequency of "sex" is 78 per year, and we want to know the average frequency of a specific behavior, we do the following calculation:

25 people engage in the behavior 0 times	(25*0 = 0)
25 people engage in the behavior 78 times	(25*78 = 1950)
50 people engage in the behavior 39 times*	(50*39 = 1950)

*Since "sometimes" could mean any amount between almost always and almost never, we use an average frequence of half or 50%.

These products are then added together, and the total divided by 100 to get the <u>average annual frequency</u> for the entire population. (0 + 1950 + 1950 = 3900; 3900/100 = 39)

Frequency of condom or other barrier use is calculated in the same way to get average annual frequency of unprotected behavior.

All frequencies for FSF, FSF/M, FSF-IDU and FSF/M-IDU are based on data that were presented as a certain percentage of women engaging in the behavior once during the past year, more than once per month, several times per month, etc. The actual numbers used for calculation of number of times per year are as follows:

Never	0	
Once	1	
Less than once per month	12	
Several times per month	33	
1-2 times per week	78	
More than several times per week	156 and 260	(including both numbers established a range for annual frequency from which a mean frequency was then calculated)

To get the average annual frequency for the population as a whole, the same type of equation as described above was used. For example, if 5% never performed fellatio, 10% performed fellatio once, 20% less than once per month, 20% several times per month, 25% 1-2 times per week, and 20% more than several times per week, these percentages would be multiplied by the actual number assigned to that category. The products would then be added together and the sum divided by 100 for the average frequency overall. The calculations are illustrated below:

5*0 =	0
10*1 =	10
20*12 =	240
20*33 =	660
25*78 =	1950
20*156 or 20*260 =	3120 or 5200
	5980/100 to 8060/100 = range of 59.8 - 80.6

The tope number in each cell of the matris is the estimated annual frequency. The following describes how each frequency in the matrix was either calculated or estimated based on the available data.

Males who have Sex with Males and Inject Drugs (MSM-IDU)

Sharing Unclean Needles: 70

Osella et al. (1993) found that "gay IDU's are 2.7 times more likely to share needles that heterosexual IDUs," while others (Lemp et al., 1994; Wolitzki et al., 1992) did not show such a discrepancy. Taking this into account and based on the unclean needle sharing frequency for MSF-IDU of 38, the average annual frequency for MSM-IDU is estimated at 70 for the matrix.

Receptive Anal Intercourse: 24

Calculations for sexual behaviors are based on Barrett et al.'s (in press) study which reported the median frequency of "sex" for MSM to be 45 times per year. Receptive anal intercourse behavior data for MSM-IDU included: 31% of MSM-IDU did not have receptive anal intercourse during the prior six months; 32% of those having any anal intercourse never used condoms (22% of all subjects) (Lewis and Watters, 1994). It is assumed that the remaining 47% had some unprotected anal intercourse. The resulting calculation is: ((31*0) + (22*45) + (47*24))/100 = 21. Findings from a study by Wolitzki et al. (1992) found that 46% of their sample reported no condom use. The frequency was therefore increased to 24 to account for this finding on condom use.

Insertive Anal Intercourse: 18

Calculations for sexual behaviors are based on Barrett et al.'s (in press) study which reported the median frequency of "sex" for MSM to be 45 times per year. Insertive anal intercourse behavior data for MSM-IDU included: 46% of MSM-IDU did not have receptive anal intercourse during the prior six months; 32% of those having any anal intercourse never used condoms (17% of all subjects) (Lewis and Watters, 1994). It is assumed that the remaining 37% had some unprotected anal intercourse. The resulting calculation is: ((46*0) + (17*45) + (37*24))/100 = 17. Findings from a study by Wolitzki et al. (1992) found that 46% of their sample reported no condom use. The frequency was therefore increased to 18 to account for this finding on condom use.

Giving and Getting Fellatio: 30

Calculations for sexual behaviors are based on Barrett et al.'s (in press) study which reported the median frequency of "sex" for MSM to be 45 times per year. Behavior data on oral sex for MSM-IDU included: 13% never engaged in fellatio (either giving or receiving), and 44% of those who did, never used condoms (Lewis and Watters, 1994). Therefore 38% of the total engaged in unprotected fellatio and 40% may have engaged in unprotected fellatio. The resulting calculation is: ((13*0) + (38*45) + (49*24))/100 = 30.

Other Blood to Blood: 24

In the absence of any research data, this frequency is a rough estimate.

Sharing Unclean Sex Toys: 35

In the absence of any research data, this frequency is a rough estimate.

Males who have Sex with Males and Females and Inject Drugs (MSM/F-IDU)

Sharing Needles: 75

MSM/F-IDU were found to be slightly more likely to share unclean needles that MSM-IDU (Lewis and Watters, 1994). Therefore, average annual frequency was estimated at 75, slightly higher than the 70 for MSM-IDU.

Receptive Anal Intercourse: 7

Calculations for sexual behaviors are based on Barrett et al.'s (in press) study which reported the median frequency of "sex" for MSM to be 45 times per year. Receptive anal intercourse behavior data for MSM/F-IDU included: 80% did not have receptive anal intercourse during the prior six months; 52% of those having any anal intercourse never used condoms (10% of all subjects) (Lewis and Watters, 1994). It is assumed that the remaining 10% had some unprotected anal intercourse. The resulting calculation is: (80*0 + 10*45 + 10*24)/100 = 7.

Insertive Anal Intercourse: 18

Calculations for sexual behaviors are based on Barrett et al.'s (in press) study which reported the median frequency of "sex" for MSM to be 45 times per year. Considering that in one study, 33% had insertive anal intercourse with men and 16% had it with women (Lewis and Watters, 1994), a maximum of 51% had not had insertive anal intercourse with either gender. Of those that did engage in insertive anal intercourse, 52% never used condoms, which is 27% of all subjects. It is assumed that the remaining 22% had some unprotected anal intercourse. The resulting calculation is: ((51*0) + (27*45) + (22*24))/100 = 18.

Insertive Vaginal Intercourse: 21

Calculations are based on the median frequency of "sex" per year of 45 (Barrett et al., in press). Lewis and Watters (1994) found that 36% of their sample did not engage in vaginal intercourse during the prior six months, and 41% of those who did, did not use condoms (26% of the total). It is assumed that the remaining 38% had some unprotected vaginal intercourse. The resulting calculation is: ((36*0) + (26*45) + (38*24))/100 = 21.

Give Fellatio: 13

Calculations are based on the median frequency of "sex" per year of 45. 64% did not receive fellatio during prior six months, and 47% of those who did, did not use condoms (17% of the total). It is assumed that 19% had some unprotected fellatio. The resulting equation is: ((64*0) + (17*45) + (19*24))/100 = 13.

Give Cunnilingus during Menses: 3

In the absence of data on this behavior for MSM/F-IDU, we used a formula based on data for FSF (SF Department of Public Health, 1993). For FSF, the frequency of cunnilingus during menses is approximately 15% of the frequency of cunnilingus without menses. Using this 15%, for MSM/F-IDU we arrive at 15% of 20 = 3.

Give Cunnilingus: 20

Calculations are based on the median frequency of "sex" per year of 45 (Barrett et al., in press). Lewis and Watters (1994) found that 42% of their sample of MSM/F-IDU had engaged in cunnilingus during the prior six months. Assuming all those who engaged never used a barrier, the resulting calculation is: ((58*0) + (42*45))/100 = approximately **20.**

Other Blood to Blood: 7

In the absence of any research data, this frequency is a rough estimate.

Receive Fellatio: 18

Calculations are based on the median frequency of "sex" per year of 45 (Barrett et al., in press). Considering that 53% of subjects in Lewis and Watters' (1994) study received fellatio from men during the prior six months and 47% received fellatio from women, it was estimated of 47% of the total never received fellatio, and 47% of those who did, did not use condoms (25% of all subjects). The resulting calculation is: ((47*0) + (25*45) + (28*24))/100 = 18.

Sharing Unclean Sex Toys: 22

In the absence of any research data, this frequency is a rough estimate.

Males who have Sex with Males (MSM)

Receptive Anal: 21

Calculation is based on the median frequency of "sex" per year = 45, and the finding that 45.7% of individuals engage in unprotected anal intercourse (Barrett et al., in press). Thus we have: (45.7%* 45)/100 = 21. This number is a realistic estimate based on other studies (Osmond et al., 1994; Hays et al., 1990; Bastani and Marcus, 1991; Paul et al., 1993), where similar calculations resulted in average annual frequencies ranging from 12 to 30.

Insertive Anal: 21

The same frequency for receptive anal intercourse, **21**, was used for insertive anal intercourse, since many studies did not differentiate between the two, and for those that did, the differences were small.

Giving fellatio: 9

Average annual frequency of **9** is based on Hays et al.'s (1990) finding that 19% of individuals performed fellatio with ejaculation. This was multiplied by 45, the median frequency of "sex" per year (Barrett et al., in press). (19%*45)/100 = 9.

Other Blood to Blood: 21

In the absence of any research data, this number is a rough estimate.

Receiving fellatio: 37

Average annual frequency of **37** is based on one finding that 83% of MSM report receiving fellatio without ejaculation (Hays et al., 1990). The median frequency of "sex", 45, was also used (Barrett et al., in press). (83*45)/100 = 37.

Males who have Sex with Males and Females (MSM/F)

For the average annual frequencies of **Receptive Anal Intercourse, Insertive Anal Intercourse, Giving Fellatio, and Receiving Fellatio** we used the same numbers as those for MSM. Most of the studies examined did not distinguish between MSM and MSM/F so the same numbers were used for the matrix.

Vaginal Insertive Intercourse, Giving Cunnilingus and Giving Cunnilingus during Menses:

The only data on heterosexual activity of MSM/F were findings from studies of MSM/F IDUs (Wolitski et al., 1992; Lewis and Watters, 1994). Therefore we used the same frequency figures as those for the MSM/F IDU.

Females who have Sex with Males and Inject Drugs (FSM-IDU)

Sharing Unclean Needles: 40

Based on Freeman et al.'s (1994) study that reported minimum average injection frequency of heroin to be 243-438; cocaine, 107-164 and speedballs, 123-202, the overall frequency of injection was estimated to be roughly 350 times per year. The study also reported on sharing and cleaning behaviors of IDUs. Based on the percent who shared some (70%) or all (4%) of the time, the frequency of sharing was calculated as follows: ((4*350) + (26*0) + (70*175))/100 = 137. Then multiplying by the percent of those who did not clean their needles every time (35%), the average frequency of sharing unclean needles was approximately 58 times per year.

Calculation of a second study's (Latkin et al., 1994) findings on sharing and cleaning frequency resulted in an estimated 32 times per year. Frequency for the matrix was then estimated at **40** based on these and other data.

Receptive Anal Intercourse: 6

This figure was taken directly from the study by Wells et al. (1993), where the frequency of anal intercourse averaged .49 times per month. Multiplying .49 by 12 results in 5.88 rounded to 6 times per year.

Receptive Vaginal Intercourse: 77

Data from Wells et al.,'s (1993) was used. The average frequency of vaginal sex per year multiplied the percent of times a condom was not used resulted in: 86% of 89 = **77**.

Giving Fellatio: 48

This figure was taken directly from the study by Wells et al. (1993), where the frequency of fellatio averaged 3.97 times per month. Multiplying 3.97 by 12 results in 47.64 rounded to 48 times per year.

Other Blood to Blood: 6

In the absence of any research data, this frequency is a rough estimate.

Getting Cunnilingus: 35

This figure was taken directly from the study by Wells et al. (1993), where the frequency of cunnilingus averaged 2.92 times per month. Multiplying 2.92 by 12 results in 35.04 rounded to 35 times per year.

Sharing Unclean Sex Toys: 15

In the absence of any research data, this frequency is a rough estimate.

Males who have Sex with Females and Inject Drugs (MSF-IDU)

Sharing Unclean Needles: 38

Based on Freeman et al.'s (1994) study that reported minimum average injection frequency of heroin to be 234-408; cocaine, 132-206 and speedballs, 135-216, the overall frequency of injection was estimated to be roughly 350 times per year. The study also reported on sharing and cleaning behaviors of IDUs. Based on the percent who shared some (75%) or all (2%) of the time, the frequency of sharing was calculated as follows: (2*350) + (23*0) + (75*175))/100 = 138. Then multiplying by the percent of those who did not clean their needles every time (33%), the average frequency of sharing unclean needles was approximately 46 times per year.

Calculation of a second study's (Latkin et al., 1994) findings on sharing and cleaning frequency resulted in an estimated 32 times per year. Frequency for the matrix was then estimated at **38** based on these and other data.

Insertive Anal Intercourse: 6

This figure was taken directly from the study by Wells et al. (1993), where the frequency of anal intercourse averaged .53 times per month. Multiplying .53 by 12 results in 6.36 rounded to 6 times per year.

Insertive Vaginal Intercourse during Menses: 12

In the absence of data on this behavior for MSF-IDU, we used a formula based on data for FSF (SF Department of Public Health, 1993). For FSF, the frequency of cunnilingus during menses is approximately 15% of the frequency of cunnilingus without menses. Using this 15%, for MSF-IDU we arrive at 15% of 82 (see below) = 12.

Insertive Vaginal Intercourse: 82

Average frequency of vaginal sex per year multiplied by the average percent of time a condom is not used: 90% * 91 = 82 (Wells et al., 1993).

Giving Cunnilingus during Menses: 6

In the absence of data on this behavior for MSF-IDU, we used a formula based on data for FSF (SF Department of Public Health, 1993). For FSF, the frequency of cunnilingus during menses is approximately 15% of the frequency of cunnilingus without menses. Using this 15%, for MSF-IDU we arrive at 15% of 41 (see below) = 6.

Giving Cunnilingus: 41

This figure was taken directly from the study by Wells et al. (1993), where the frequency of cunnilingus averaged 3.38 times per month. Multiplying 3.38 by 12 results in 40.56 rounded to 41 times per year.

Other Blood to Blood: 2

In the absence of any research data, this number is a rough estimate.

Getting Fellatio: 42

This figure was taken directly from the study by Wells et al. (1993), where the frequency of fellatio averaged 3.47 times per month. Multiplying 3.47 by 12 results in 41.64 rounded to 42 times per year.

Sharing Unclean Sex Toys: 22

In the absence of any research data, this frequency is a rough estimate.

Females who have Sex with Females and Males and Inject Drugs (FSF/M-IDU)

Needle sharing: 40

In the absence of needle sharing data on injection drug using women who have sex with women and men specifically, frequencies for FSM-IDU were used.

All Sexual Behaviors

In the absence of data for this population, frequencies of sexual behaviors were copied from non-IDU FSF/M.

Females who have Sex with Females and Inject Drugs (FSF - IDU)

Sharing Unsterile Needles: 40

In the absence of needle sharing data on injection drug using women who have sex with women specifically, frequencies for FSM-IDU were used.

For all sexual behaviors, frequencies were copied from non-IDU FSF.

Females who have Sex with Females and Males (FSF/M)

Average annual frequencies of the HIV transmission behaviors for women who have sex with women and men (FSF/M) were calculated based on data from the San Francisco Department of Public Health, AIDS Office study on the health behaviors of lesbian and bisexual women (1993).

Anal Receptive: 9

The average frequency of anal receptive intercourse with a primary partner was calculated to be 8-11 times per year. The frequency of anal intercourse with a partner outside the primary relationship averaged to once per year. Based on these data, the average annual frequency for all FSF/M is estimated at 9.

Vaginal Receptive: 46

The average frequency of vaginal intercourse with a primary partner was calculated to be 56-86 per year. The frequency of vaginal intercourse with partners outside of a primary relationship was calculated to be 9-10 times per year. The composite range was estimated to be 38-53, with an overall average frequency of 46.

Give Fellatio: 24

The average frequency was calculated to be 30-42 times per with primary partner and 6 times per year with partners outside of a primary relationship. We reduced the frequency for women with primary partners to a range of 15-21 since only 47% had primary partners. Incorporating the non-primary partner activity, the overall range is 21-27, with an average annual frequency of **24**.

Give cunnilingus during menses: 16

The average frequency of cunnilingus during menses for women with their primary partners is 13-18. For cunnilingus with partners outside a primary relationship the average is 4-5. The overall average frequency was estimated to be 16.

Giving and Receiving Cunnilingus: 100

Estimates of frequency of cunnilingus with male and female partners, primary and non-primary were gathered and calculated separately in the study. Receiving cunnilingus from a primary male partner was calculated at 56-78 times per year; from a non-primary male partner, 22-24 times per year. Giving or receiving cunnilingus from a primary female partner was calculated to be 72-107 times per year, and from a non-primary female partner 38-50 times per year. Since varying proportions of women reported having primary and non-primary partners and for those with female partners, giving and receiving cunnilingus was not distinguished, the average annual frequency was estimated to be roughly 100.

Other blood to blood (Fisting): 14

The frequency of fisting for females who have sex with males and females was calculated to be 12-16 times per year with partners in a primary relationship and 4 times per year for partners outside of a primary relationship. Based on these numbers, the overall frequency was estimated at roughly 14.

Sharing Unclean Sex Toys and Digital Sex: 64

Data on sharing unclean sex toys and having digital sex was available only for the FSF/M's activities with female partners. These frequencies were calculated to be 107 - 149 with primary female partner and 54-67 with non-primary female partner. The non-primary numbers were reduced by half to account for the low percentage of women who had non-primary partners. This results in a range of 134-182. The final frequency of 64 that was estimated was substantially lower to account for the fact that many women were with men primarily.

Vaginal to Vaginal during menses: 16

Since no data existed, the same number as giving cunnilingus during menses was used as a best guess.

Vaginal to Vaginal: 100

Since no data existed, the same number as giving and receiving cunnilingus was used as a best guess.

Females who have sex with males (FSM)

Anal Receptive: 6

Based on an average frequency of unspecified "sex" of 76 times per year and using the data on frequency of anal sex (80% never; 1% at last event (assumed always); 18% sometimes), the equation is [(80 * 0) + (1 * 76) + (18*38)] / 100 = 8. (Laumann et al., 1994)

Factoring in condom use data (76% never; 16% always) (Bastani and Marcus, 1991), we have the equation: [(16 * 0) + (76 * 8) + (8*4)] / 100 = **6.**

Vaginal Receptive: 62

This frequency is based on the average annual frequency of intercourse = 93, from a different source (Leigh, Temple and Trocki, 1993). Applying condom use data (68% never; 14% always) (Bastani and Marcus, 1991), the equation is [(68 * 93) + (14*0) + (18 * 47)] / 100 = **62.**

Giving Fellatio: 33

Based on average annual frequency of "sex" of 76, and frequency of fellatio data (32% never; 19% at last event (assumed always)) (Laumann et al., 1994), the equation is [(32 * 0) + (20 * 76) + (48*38)] / 100 = **33.**

Other Blood to Blood: 6

In the absence of any research data, this number is a rough estimate.

Get Cunnilingus: 37

Calculations are based on the average annual frequency of "sex" of 76 (Laumann et al., 1994). The percentage of women who engage in cunnilingus is: 27% never and 25% always (Laumann et al., 1994). We then use the equation: [(27 * 0) + (27 * 76) + (48*38)] / 100 = **37.**

Sharing Unclean Sex Toys: 15

In the absence of any research data, this number is a rough estimate.

Males who have sex with females (MSF)

Anal Insertive: 8

The frequency is based on average frequency of "sex" of 78 and behavior data on anal sex (74% never; 2% did it at last event (we are assuming always for purposes of the equation) and 24% sometimes) (Laumann et al., 1994). Average frequency of any anal insertive sex is calculated using the following equation: (74 * 0) + (2 * 78) + (24*39) = 1092; 1092 / 100 = 11.

Then taking into account the data on condom use (69% never use condoms; 22% always do, and 9% sometimes do) (Bastani and Marcus, 1991) we use these percentages with the average frequency of anal sex of 11. The following equation is used to calculate unprotected insertive anal intercourse. (69 * 11) + (22 * 0) + (9 * 5) = 804; 804/100 = **8**.

Vaginal Insertive during Menses: 10

In the absence of data on this behavior for MSF, we used a formula based on data for FSF (SF Department of Public Health, 1993). For FSF, the frequency of cunnilingus during menses is approximately 15% of the frequency of cunnilingus without menses. Using this 15%, for MSF we arrive at 15% of 66 = 10.

Vaginal Insertive: 66

Frequency is based on the average annual frequency of "sex" and 81% who report always having vaginal intercourse (Laumann, 1994). (Assume 0% never and 19% sometimes) The calculation is (81*78) + (19*39) = 7059; 7059 / 100 = 71. A different study (Leigh et al., 1993) reported average annual frequency of intercourse to be 83.5. We adjusted our average frequency to 80.

Based on condom use data of 59% never and 18% always (Bastani and Marcus, 1991), (18 * 0) + (59 *80) + (23 * 40) = /100 = 66.

Giving Cunnilingus during Menses: 6

In the absence of data on this behavior for MSF, we used a formula based on data for FSF (SF Department of Public Health, 1993). For FSF, the frequency of cunnilingus during menses is approximately 15% of the frequency of cunnilingus without menses. Using this 15%, for MSF we arrive at 15% of 41 = 6.

Giving Cunnilingus: 41

The frequency is based on an average frequency of unspecified "sex" of 78 times per year and data on cunnilingus activity (23% never, 29% always and 48% sometimes) (Laumann et al., 1994). We calculated average frequency of cunnilingus as follows: (23 * 0) + (29*78) + (48*39) = 4134; 4134 / 100 = 41.

Other blood to blood: 2

In the absence of any research data, this number is a rough estimate.

Getting Fellatio: 43

Based on an average frequency of unspecified "sex" of 78 times per year and using the data on frequency of fellatio (21% never; 31% always; 48% sometimes) (Laumann et al., 1994), the equation is: (21 * 0) + (31 * 78) + (48 * 39) = 4290; 4290 /100 = **43**.

Sharing Unclean Sex Toys: 15

In the absence of any research data, this number is a rough estimate.

Females who have Sex with Females (FSF)

Average annual frequencies of the HIV transmission behaviors for women who have sex with women (FSF) were calculated based on data from the San Francisco Department of Public Health, AIDS Office study on the health behaviors of lesbian and bisexual women (1993).

Giving cunnilingus during menses: 14

The average frequency of cunnilingus during menses for women with their primary partners is 11. For cunnilingus with partners outside a primary relationship the average is 6. We reduced the frequency outside a primary relationship by half as the data found that substantially fewer women had this type of partner. Then we add the two numbers: 11+3=**14**.

Cunnilingus: 94

Giving and receiving cunnilingus were not distinguished in these data. The average frequency of cunnilingus for women with their primary partners was calculated to be 78. For cunnilingus with partners outside a primary relationship the average is 31. We reduced the frequency outside a primary relationship by half as the data found that substantially fewer women had this type of partner. Then we add the two numbers: 78+16=**94**.

Other blood to blood (Fisting): 12

The average frequency of fisting with a primary partner was calculated to be 8 times per year. Fisting with non-primary partners showed an average of 6-9 times per year. Again, the frequency for non-primary partners is reduced by half, and added to the number for primary partners; 8+4 = **12.**

Sharing Sex Toys/Digital sex: 124.

The average frequency of sharing sex toys and engaging in digital sex for women with their primary partners is 103. For this behavior with partners outside a primary relationship the average is 42. We reduced the 42 (frequency outside a primary relationship) by half as the data found that substantially fewer women had this type of partner. Then we add the two numbers: 103 + 21 = 124.

Vaginal to Vaginal during Menses: 14

In the absence of data on this behavior, we used a formula based on the data for frequency of cunnilingus during menses (SF Department of Public Health, 1993). The frequency of cunnilingus during menses is approximately 15% of the frequency of cunnilingus without menses. We applied this 15% to the frequency we estimated for vaginal to vaginal sex without menses (see below). Thus, 15% of 94 = 14.

Vaginal to Vaginal: 94

Since no data existed, the same number as giving cunnilingus during menses was used as a best guess.

INFORMATION GATHERED ABOUT FREQUENCY OF RISK BEHAVIORS

The following pages present the research data gathered on risk behaviors. The information on the applicable behaviors is presented separately for each behavior group. The behavior groups are listed in order of priority ranking. For many risk behaviors, the findings from several sources are shown. The numbers in parentheses refer to the source of that piece of information. The numbered sources are listed in the last section of Appendix A.

Males who have Sex with Males and Inject Drugs (MSM-IDU)

MSM-IDU Sharing Needles

80% share needles; 85% do not always clean (13)

Gay IDU's are 2.7 time more likley to share needles than heterosexual IDUs. (24)

Among Gay and bisexuals who had injected drugs during previous 6 months, percent who had shared unclean needles: 14% (7)

MSM-IDUs Receptive Anal Intercourse

% who engaged in RAI during prior 6 months: 69%
% of total engaging in any anal sex who never use condoms: 32% (15)
54% report using condoms during prior six months. (13)

MSM-IDUs Insertive Anal Intercourse

% who engaged in IAI during prior 6 months: 54%
% of total engaging in any anal sex who never use condoms: 32% (15)

54% report using condoms during prior six months. (13)

MSM-IDUs Give Fellatio

% who engaged during prior 6 months: 87%
% of total engaging in any oral sex who never use condoms: 44% (15)

MSM-IDUs Get Fellatio

% who engaged during prior 6 months: 87%
% of total engaging in any oral sex who never use condoms: 44% (15)

Males who have Sex with Males and Females and Inject Drugs (MSM/F-IDU)

MSM/F-IDU Sharing Needles 90% share needles; 91% do not always clean (13) Among Gay and bisexuals who had injected drugs during previous 6 months, percent who had shared unclean needles: 14% (7) % sharing unclean needles in prev. 90 days: 12% (28)	**MSM/F IDUs insertive vaginal intercourse** 64% engaged in vaginal sex;41% never used condoms (15) 49% report using condoms during prior six months (13)
MSM/F IDU receptive anal intercourse % who engaged in past 6 months: 20% 52% of total MSM/F who had anal sex with men or women never used condoms (15)	**MSM/F IDU insertive anal intercourse** % with men in past 6 months: 33% % with women in past 6 months: 16% 52% of total MSM/F who had anal sex with men or women never used condoms (15)
MSM/F IDU give fellatio % who engaged in past 6 months: 36% 47% of total MSM/F who received fellatio from men or women never used condoms (15)	**MSM/F IDU receive fellatio** % with men in past 6 months: 53% % with women in past 6 months: 47% 47% of total MSM/F who received fellatio from men or women never used condoms (15)
MSM/F IDU give cunnilingus % who engaged in past 6 months: 42% (15)	

Males who have Sex with Males (MSM)

MSM Receptive Anal Intercourse (RAI)

ages 18-29: 26% unprotected RAI in last year (6)
ages 18-25: 32% had unprot. RAI in last 6 mos. (25% reported sex with men and women in past 3 years) (30)
Gay and bisexual men :
Unprotected receptive anal intercourse with ejaculation: 11% (25)

24-35% of MSM never engaged in AI during past year.
14% were always receptive; 24% were never receptive
71% always used condom; 21% never used condom (2)

Gay and bi-sexual: 23% had RAI in last 90 days (28)

Asian/PI: 17% have unprotected anal intercourse with ejaculation. 13% are receptive (8)

(See Any Anal Intercourse)

MSM Insertive Anal Intercourse

ages 18-25: 34% had unprot. RAI in last 6 mos. (25% of sample reported sex with men and women in past 3 years) (30)

24-35% of MSM never engaged in AI during past year.
16% were always insertive
35% were never insertive
76% always used a condom
16% never used a condom (2)

Asian/PI: 17% have unprotected anal intercourse with ejaculation.(8)

Gay and bi-sexual: 21% in last 90 days (28)

(See Any Anal Intercourse)

Any Anal Intercourse - receptive or insertive

Average annual freq. of "sex": 94 (median: 45)
% having unprot. anal intercourse: 45.7% (Receptive or insertive not specified) (26)

Average annual frequency of unprotected anal intercourse among substance abusers w/ primary partner: 114; w/non-primary partners: 88.
30% of substance abusers report unprotected anal intercourse w/ejaculation (29)

Any unprotected anal intercourse: 33% (25)

Af. Amer. >50% had AI in past 6 mos. , which is higher than White men in other studies (15% and 20%).(9)
9-15 year old African American youth: 21% have had insertive or receptive anal sex (3)

Ages 17-22, gay/bisexual: % having unprotected anal intercourse in previous 6 months:
White: 28%; Af. Am.: 39%; Latino: 40%; A/PI: 27%; Other: 45% ; Gay only: 36% (7)

% engaging in unprotected anal intercourse: Ages < 30: 44%; Ages > 30: 18% (27)

MSM Performing Fellatio

ages 18-25: 19% with ejaculation last 6 mos.
82% w/o ejaculation
(25% reported sex with men and women in past 3 years) (30)

Gay and bisexual men:
Performed fellatio with ejaculation 21%
Always used condoms: 4% (25)

(See "Any Fellatio")

MSM Receiving Fellatio

ages 18-25: 24% with ejaculation last 6 mos.
83% w/o ejaculation
(25% reported sex with men and women in past 3 years) (30)

(See "Any Fellatio)

Any Fellatio

% engaged in fellatio during last 6 months:
17-19 y.o. 80% without ejaculation; 35% with ejaculation
20-22 y.o. 85% without ejaculation; 36% with ejaculation (7)

Males who have Sex with Males and Females (MSM/F)

MSM/F Anal Intercourse		MSM/F Perform Fellatio	
Average annual freq. of "sex":	94 (median: 45)	Gay and bisexual men:	
% having unprot. anal intercourse	45.7%	Performed fellatio with ejaculation	21%
(Receptive or insertive not specified; sample represents gay and bisexual subjects) (26)		Always used condoms:	3% (25)
17-22 y.o.:			
30% had unprotected anal intercourse during previous 6 mos (7)			
gay and bisexual men :			
Unprotected receptive anal intercourse with ejaculation:	11%		
Any unprotected anal intercourse:	33% (25)		

Females who have Sex with Males and Inject Drugs (FSM-IDU)

FSM-IDU Sharing Needles

Among female IDUs average injection frequency per year (minimum):

heroin:	243-438
cocaine:	107-164
speedballs:	123-202

70% of female IDUs shared needles at least some of the time; 4% always shared; 35% of those who shared did not always clean needles. (23)

Women are more likely to share and with more partners, than are men. 74% shared needles more than half the time. (22)

Mean of 18 times per year for IDUs in treatment who do share at all (63%).
Mean of 30 times per year for IDUs not in treatment who do share (79%).
Those in treatment also more likely to have "safe" injections (17)

Average frequency of sharing needles: 70 (all IDUs)
33% never share needles; of those who share, 34% always clean their needles. (18)

66.3% report sharing needles prior to needle exchange program and 35.5% shared 3 years after participation . (19)

	Before exchange	After exchange
Avg. Annual Freq. of		
Obtaining used syringes	684	432
Passing a used syringe	1200	780
Bleach use	852	127

(20)

Crack users were more likely to share unclean needles. (21)

FSM-IDU Receptive Vaginal Intercourse

88.6 average # times per year
Used a condom an average of 14.5% of the time
Median number of condom uses = 0 (10)

Alaskan Native women report less use of latex barrier during any kind of sex. Also, a higher proportion of IDU sex partners. (11)

7% (of those w/one partner) to 18% (of those w/multiple partners) always use condoms. 23% had between 4-300 sex partners in last 6 months; mean number of partners=9; 72% of women with more than one sex partner reported having sex for money. (23)

FSM IDU Perform Fellatio

89% of those sexually active engage in fellatio;
Annual frequency: 48 (10)

FSM-IDU Receive Cunnilingus

35 - average # of times per year for sexually active women (26% engage in cunnilingus). (10)

FSM-IDU Receptive Anal Intercourse

5.88 average # times per year for women who are sexually active. (10)

Males who have Sex with Females and Inject Drugs (MSF-IDU)

MSF-IDU Insertive Anal Intercourse

6.4 - average # of times per year for sexually active men. (10)

MSF-IDU Giving Cunnilingus

40.6 - average per year for sexually active men. (10)

MSF-IDU Insertive Vaginal Intercourse

90.8 - average # of times per year
Used a condom an average of 10.3% of the time
Median # of time used a condom = 0 (10)

31% use condoms (13)

12% (of those w/multiple partners) to 13% (of those w/one partner) always use condoms. (23)

MSF-IDU Receive Fellatio

Average Annual frequency for sexually active men: 42 (10)

MSF-IDU Sharing Needles

Among Male IDUs average injection frequency per year (minimum):

heroin:	234-408
cocaine:	132-206
speedballs:	135-216

75% of male IDUs shared needles some of the time; 2% always shared; 33% of those did not always clean needles. (23)

34% shared needles more than half the time (22)

MSF: 80% share needles; 87% do not always clean. (13)

Mean of 18 times per year for all IDUs in treatment who do share at all (63%).
Mean of 30 times per year for IDUs not in treatment who do share (79%).
Those in treatment also more likely to have "safe" injections (17)

Average frequency of sharing needles: 70 (all IDUs) 33% never share needles; of those who share, 34% always clean their needles. (18)

66.3% report sharing needles prior to needle exchange program and 35.5% shared 3 years after participation . (19)

	Before exchange	After exchange
Avg. Annual Freq. of		
Obtaining used syringes	684	432
Passing a used syringe	1200	780
Bleach use	852	127 (20)

Crack users were more likely to share unclean needles. (21)

Females who have Sex with Females and Males and Inject Drugs (FSF/M-IDU)

FSF/M-IDU Sharing Needles

Among FSF and FSF/M IDUs (n=11) none reported sharing needles. (12)

The following information applies to all female IDU's:

Among female IDUs average injection frequency per year (minimum):

heroin:	243-438
cocaine:	107-164
speedballs:	123-202

70% of female IDUs shared needles at least some of the time; 4% always shared; 35% of those who shared did not always clean needles. (23)

Women are more likely to share and with more partners, than are men. 74% shared needles more than half the time. (22)

Mean of 18 times per year for IDUs in treatment who do share at all (63%).
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Average frequency of sharing needles: 70 (all IDUs)
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	Before exchange	After exchange
Avg. Annual Freq. of		
Obtaining used syringes	684	432
Passing a used syringe	1200	780
Bleach use	852	127
		(20)

Crack users were more likely to share unclean needles. (21)

FSF/M-IDU Sexual Behaviors

No research data was found.

Females who have Sex with Females and Inject Drugs (FSF-IDU)

FSF-IDU Sharing Needles

Among FSF and FSF/M IDUs (n=11) none reported sharing needles. (12)

The following information applies to all female IDU's:
Among female IDUs average injection frequency per year (minimum):

heroin:	243-438
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	Before exchange	After exchange
Avg. Annual Freq. of		
Obtaining used syringes	684	432
Passing a used syringe	1200	780
Bleach use	852	127

(20)

Crack users were more likely to share unclean needles. (21)

FSF-IDU Sexual Behaviors

No research data was found.

Females who have Sex with Females and Males (FSF/M)

FSF/M Receptive Anal Intercourse

Average # of times per year unprotected with a primary partner: 8-11

For women with partners outside of a primary relationship: 1
(12)

FSF/M Receptive Vaginal Intercourse

Average # of times per year unprotected with a primary partner. 58-86

For women with partners outside of a primary relationship: average # of times per year with these "secondary" partners. 9-10
(12)

FSF/M Perform Fellatio

Average frequency per year with a primary partner: 34 -46

Average frequency per year with a partner outside a primary relationship: 5.7
(12)

FSF/M Receive Cunnilingus

Average frequency from a male partner in primary relationship: 56-78

Average frequency per year with a male partner outside a primary relationship: 22-24

With female partners:
Primary relationship: 72-107
Outside primary relationship: 38-50
(12)

FSF/M Sex toys/Digital sex

Primary relationship: 107-149
Outside primary relationship: 54-67
(12)

FSF/M Cunnilingus during menses

Primary relationship: 13-18
Outside primary relationship: 4-5
(12)

FSF/M Other Blood to Blood

Fisting
Primary relationship: 12-16
Outside primary relationship: 4
(12)

FSF/M Vaginal to Vaginal

Females who have Sex with Males (FSM)

FSM Anal Receptive

Women "have sex" with either gender 75.6 times per year.

Anal:	Ever done it	Did it during last year	Did it at last event
All	20%	9%	1%
AfAm	10%	6%	2%
Lat.	17%	13%	1%
White	23%	8%	1%

% who always used a condom during anal sex:

Marriages	13%
Cohabitations	11%
Long term Ptnrs.	21%
Short term Ptnrs.	50% (1)

76% of women never use a condom
16% always use a condom (2)

FSM Vaginal Receptive

Women "have sex" with either gender 75.6 times per year.
% who always have vaginal sex:

Marriages	81%
Cohabitations	77%
Long term Ptnrs.	75%
Short term Ptnrs.	86% (1)

Median frquency of vaginal sex per year: 50 (4)

68% of women never use a condom during vaginal intercourse; 14% always use one (2)

Af. Amer. men and women mean # unprotected vaginal intercourse during prior month: 8.75. (5)
8.75 X 12 = 105 times per year.

Average frequency of Intercourse during past year: 92.8 (14)

FSM Perform Fellatio

Women "have sex" with either gender 75.6 times per year.

Fellatio:	Ever done it	Did it at last event
All	68%	19%
AfAm	34%	9%
Lat.	60%	19%
White	75%	21% (1)

FSM Receive Cunnilingus

Women "have sex" with either gender 75.6 times per year.
73% had ever had it in lifetime (from either gender)
20% got cunnilingus during last sexual event (w/men only)
% who always get cunnilingus: 12-30% (1)

Males who have Sex with Females (MSF)

MSF Giving cunnilingus

Average frequency of "sex" per year: 78.
77% had ever had any kind of oral sex during lifetime.
27% had cunnilingus last time they had sex.
15-29% always have cunnilingus. (1)

MSF Insertive Vaginal Intercourse

Average frequency of "sex" per year: 78
78-81% always have vaginal intercourse. (1)

Average frequency of intercourse per year: 83.5 (14)

59% never use a condom
18% always use a condom (2)

Af. Amer. men and women mean # unprotected vaginal intercourse during prior month: 8.75. (5)
8.75 X 12 = 105 times per year.

MSF Anal Insertive

Average frequency of "sex" per year: 78.
26% ever had anal sex in lifetime with either gender.
10% did it in last year with women.
2% did it at last event.
13-63% always use a condom (depending on relationship) (1)

69% never used a condom; 22% always used a condom. (2)

MSF Getting Fellatio

Average frequency of "sex" per year: 78.
79% ever had oral sex in lifetime with either gender.
28% received fellatio at last event.
12-31% always receive fellatio when having sex. (1)

Females who have Sex with Females (FSF)

FSF Cunnilingus

Unprotected:
Average frequency with primary partner: 67-89

Average frequency outside
of primary relationship: 28-34
(12)

FSF Cunnilingus during Menses

Unprotected:
Average frequency with primary partner: 10-12

Average frequency outside
of primary relationship: 5-6
(12)

FSF - Sharing Sex Toys, Digital Sex

Unprotected:
Average frequency with primary partner: 88-118

Average frequency outside
of primary relationship: 38-49
(12)

FSF - Other Blood to Blood

Fisting:
Average frequency with primary partner: 8-9

Average frequency outside of primary relationship: 6-9
(12)

REFERENCES

1. Laumann E, Gagnon J, Michael R, and Michaels S (1994). The Social Organization of Sexuality: Sexual Practices in the United States. The University of Chicago Press, Chicago, IL.
National study of 3,432 randomly selected adults (18-59). Based on interview responses to questions on sexual behaviors. Most data area for WSM, MSW.

2. Bastani R, and Marcus AC (1991). General population survey of AIDS related attitudes and risk behaviors in California. Submitted to the State of California, Department of Health Services, Office of AIDS, pursurant to contract: 89-97668. Unpublished report.
UCLA study of 3,500 Californians. Sample significantly underrepresents people of color.

3. Stanton B, Li X, Black M, Ricardo I et al. (1994). Sexual practices and intentions among preadolescent and early adolescent low-income urban African-Americans. Pediatrics 93(6 Pt 1):966-973.
Cross-sectional cohort study of 350 African American youths aged 9 to 15. Conducted in recreation centers serving public housing developments in an eastern city.

4. General Social Surveys as cited in Seidman S, and Rieder R (1994). A review of Sexual Behaviors in the United States. American Journal of Psychiatry; 151:330-341.

5. Day NE, Houston-Hamilton A et al. A report on the first trackaing survey of AIDS knowledge, attitudes, and behaviors in San Francisco's Black communities 1988-1989. Conducted for the AIDS Surveillance Office San Francisco Department of Public Health. Unpublished report.
Face-to-face interviews with 350 African American adults in San Francisco, selected using a random block-random household sampling procedure in census tracts with 50% or more African American populations.

6. Osmond DH, Page K, Wiley J, Garrett K et al (1994). HIV infection in homosexual and bisexual men 18-29 years of age: the San Francisco Young Men's Health Study. American Journal of Public Health. 84(12):1933-7.
Household survey of unmarried 18-29 year-old men in SF selected from census tracts with high HIV incidence.

7. Lemp G, Hirozawa A, Givertz D et al. (1994). Seroprevalence of HIV and risk behaviors among young homosexual and bisexual men: The San Francisco/Berkeley Young Men's Survey. JAMA, 272:449-454.
425 young (17-22) gay and bisexual men sampled from public venues in SF and Berkeley.

8. Choi K, Cortes J, Lew S, and Coates T. AIDS Risk, Dual Identity, and Community Response among Gay Asian and Pacific Islander Men in San Francisco. Center for AIDS Prevention Studies, University of California, San Francisco. Unpublished report.
Review article.

9. Peterson JL, Coates TJ, Catania JA, Middleton L, Hilliard B, and Hearst N (1992). High-risk sexual behavior and condom use among gay and bisexual African-American men. American Journal of Public Health 82(11):1490-4.
250 gay and bisexual African American men in SF, Berkeley and Oakland were recruited from multiple venues.

10. Wells EA, Calsyn DA, Saxon AJ and Greenberg DM (1993). Using drugs to facilitate sexual behavior is associate with sexual variety among injection drug users. Journal of Nervous and Mental Disease. (181)10:626-631.
313 injection drug users (225 men, 88 women) were interviewed in a Seattle treatment centers.

11. Fisher DG, Cagle HH, Wilson PJ (1993). HIV risk behavior of Alaska Native drug users. Center for Alcohol and Addiction Studies, University of Alaska, Anchorage. Meeting abstract.
NIDA study of AN, Black and White drug users in Anchorage.

12. Health Behaviors Among Lesbian and Bisexual Women: A Community-based Women's Health Survey. San Francisco Department of Public Health AIDS Office, Prevention Services Branch; October 1993.
483 lesbian and bisexual women surveyed in San Francisco 1992-1993.

13. Wolitski R, Humfleet G, Lee J, Corby N (1992). HIV risk-related practices of male homosexual, bisexual, and heterosexual injection drug users. Psychology Department, California State University, Long Beach. Meeting Abstract.
25,296 males from 42 NIDA sites nationwide. 94% heterosexual, 4% bisexual, 2% homosexual.

14. Leigh BC, Temple MT, and Trocki KF (1993). The sexual behavior of US adults: Results from a national survey. American Journal of Public Health. 83(10):1400-1408.
Household probability survey of 2,058 adults in US. Conducted by Medical Research Institute in Berkeley.

15. Lewis DK and Watters JK (1994). Sexual behavior and sexual identity in male injection drug users. Journal of Acquired Immune Deficiency Syndromes. 7:190-198.
396 males drug injectors from street settings and drug treatment programs in San Francisco. Large proportion of people of color in sample.

16. Watters JK (1994). Trends in risk behavior and HIV seroprevalence in heterosexual injection drug users in San Francisco, 1986-1992. Journal of Acquired Immune Deficiency Syndrome. 7(12):1276-81.
Results of 13 cross-sectional surveys; total of 5,956 interviews over 6.5 years in San Francisco.

17. Longshore D, Hsieh S, Danila B, and Anglin D (1993). Methodone Maintenance and Needle/Syringe Sharing. The International Journal of Addictions, 28(10),983-996.
Survey of current and former drug users in Los Angeles County.

18. Latkin C, Mandell W, Vlahov D, et al. (1994). My place, your place, and no place: behavior setting as a risk factor for HIV-relationed injection practices of drug users in Baltimore, Maryland. American Journal of Community Psychology, 22(3)415-30.
630 inner-city IDUs in Baltimore, open-ended interviews. Conducted through Johns Hopkins Univ.

19. Watters J, Estilo MJ, Clark GL, Lorvick JL (1994). Syringe and needle-exchange as HIV/AIDS prevention for injection drug users. JAMA (271):115-20.
Evaluation of volunteer syringe exchange program in San Francisco. 5644 interviews conducted.

20. Hagan H, Des Jarlais DC, Purchase D, Reid T, Friedman SR (1991). The Tacoma syringe exchange. Journal of Addiction Disease (10) 81-8.
Interviews with 154 syringe exchange program users in Tacoma, WA.

21. Edlin BR, Irwin K, Serrano Y, Evans P, McCoy C (1993). The impact of cocaine smoking on injection practices of street-recruited drug injectors. The Multicenter Crack Cocaine and HIV Infection Study Team. CDC. The International Conference on AIDS. Meeting abstract.
158 street recruited drug injectors from New York, Miami and San Francisco.

22. Hindin R, Bigelow C, Vickers-Lahti M, Lewis B, McCusker J (1992). Gender differences in sharing behavior among intravenous drug users. University of Massachusetts Amherst, School of Public Health. International Conference on AIDS. Meeting abstract.
175 IDUs entering a residential substance abuse treatment program.

23. Freeman RC, Rodriguez GM, French JF (1994). A comparison of Male and Female Intravenous Drug Users' Risk Behaviors for HIV Infection, American Journal of Drug and Alcohol Abuse, 20(2); 129-157.
769 out-of-treatment IDUs in Paterson, New Jersey.

24. Osella A, Nicolosi A, Correa Leite ML, Velati C et al (1993). Determinants of syringe sharing in HIV-negative intravenous drug users. International Conference on AIDS. Meeting abstract.
Data from the Northern Italian Seronegative Drug Addicts study. 1394 male and 367 female.

25. Gans AA (1993). HIV/AIDS and safer sex survey of gay and bisexual men. HIV/AIDS Program, Santa Clara County Health Department. Unpublished manuscript.
395 males survey in Santa Clara County in public venues. 89% gay and 10% bisexual; 69% in 20s and 30s.

26. Barrett DC, Bolan G, Doll L, Joy D, Counts K and Harrison J (in press). Coping strategies, substance use, sexual activity and HIV sexual risks in a sample of gay male STD patients. Journal of Applied Social Psychology.
416 gay and bisexual men who were seeking services at the SF DPH STD Clinic. 80% were under age 40. 67% White.

27. Stall R, Barrett D, Bye L, Catania J, et al. (1992). A comparison of younger and older gay men's HIV risk-taking behaviors: The Communication Technologies 1989 cross-sectional survey. Journal of Acquired Immune Deficiency Syndromes 5:682-687.
Telephone survey of 401 gay men in San Francisco.

28. Paul JP, Stall R, Davis F (1993). Sexual risk for HIV transmission among gay/bisexual men in substance abuse treatment. AIDS Education and Prevention 5:11-24.
314 gay and bisexual men admitted for services at 18th Street Services in San Francisco.

29. Paul JP, Stall RD, Crosby GM, Barrett DC and Midanik LT (1994). Correlates of sexual risk-taking among gay male substance abusers. Addiction. (89) 971-983.
Same as Source 28.

30. Hays RB, Kegeles SM, Coates TJ (1990). High HIV risk-taking among young gay men. AIDS. 4:901-907.
Conducted by CAPS. Self-administered questionnaire survey of 99 "gay" men aged 18-25 in Santa Cruz, CA, Santa Barbara, CA and Eugene, OR. Sample taken from men leaving settings frequented by young gay men. 25% of the sample had had sex with men and women during past 3 years.

APPENDIX B

ESTIMATES OF RELATIVE RISK AND INFECTIVITY RATES

The examination of relative risk and infectivity rates included an analysis of the relevant literature and interviews with approximately 12 researchers about the efforts of the Priority-Setting Committee. A summary of information gained from these conversations and a table containing estimates of relative risk or infectivity rates is included below.

Essentially, the Priority-Setting Committee is developing what the policy arena would consider a complex model and the scientific community would consider a simple model. The model (Phases I and II, particularly) is not comprehensive or complex enough to take into account all the elements of risk for all the sub-communities where risk occurs; it is not sufficient to accurately predict the number of new infections that will occur, and this troubles many researchers, especially epidemiologists who develop models as predictive tools. As one said, "Modeling can be falsely reassuring if the data are shaky." The model, though, is not intended as a epidemiology tool, but rather as a guide to policy-making. To be useful as a policy aid, the model should do (at least) two things:

- Take into account the most important factors about risk, and
- Serve as a guide to policy rather than as a concrete answer.

Because the numbers used in Phase I are estimates, the results should not make the decision, but rather inform the decision. The committee will have to make the policy recommendations, using the results of the model as a guide. Almost every researcher, professor, and epidemiologist spoken to stressed this point; some recommended against modeling, others urged caution in trusting the results too much. There is utility to using a model to aid in this type of policy recommendation if the process doesn't get too bogged down by adding more and more factors or tinkering with the formula endlessly to get it to produce the answers desired by the committee. At a minimum, it is a way that the committee can examine the issue of what groups are most in need of HIV prevention efforts; at best, it can provide information that can form the basis of the decision.

The second issue is relative risk and infectivity rates. Relative risk refers to how much more risky one act is than another. For example, if vaginal receptive intercourse is arbitrarily set at 3, how much more or less risky are other acts, such as sharing needles or giving fellatio? Infectivity rates are usually estimates of the percent chance of becoming exposed per episode. These estimates vary from study to study.

Estimates of both relative risk and infectivity rates are problematic, because no one is certain of the members. A great deal of individual difference seems to exist. Also, the probability varies, depending on how infectious the partner is. It appears that people in the

very early stage of HIV (from infection to some time after antibodies develop) are highly viremic; those in the stage from a few months after infection to just before they become symptomatic are less viremic; viremia increases again in the symptomatic state (but probably does not reach the levels of viremia of the early stage); viremia then decreases sometime after an AIDS-defining condition exists. The fluctuating viremia makes it difficult to establish a per-episode infectivity rate. The issue of viremia fluctuations can be ignored in the HPPC Priority-Setting Phase I model, since the model applies to groups of people, not individuals. Within each of the behavior groups, there are people at all stages of viremia (taking it into account is also impractical for policy-setting).

A second problem in estimating relative risk or infectivity rates is that less information is known about the lower-risk acts. Infectivity and relative risk has been studied for sharing needles, anal receptive sex, and vaginal receptive sex - the acts with the highest risk. It is more difficult to determine the risk of fellatio, since most people in the studies engaged in both intercourse and fellatio. But there is a general agreement among researchers that several of the acts are of low risk (e.g., cunnilingus, vaginal to vaginal contact).

A third issue is that some researchers cite infectivity rates as estimates of the percent chance of becoming infected per partnership, and others cite rates per exposure (act). Estimates per partnership may be more reliable. These estimates come from several good studies of discordant couples; these studies do not examine what acts the couples perform, but track when/if the negative partner seroconverts. The benefit of this approach is that the information may be more reliable; the drawback is that this information cannot be found for all the behavior groups - most of the discordant couples studies are among heterosexual couples. Additionally, for many who are targeted with prevention interventions, per-relationship is a poor measure, since 'partnerships' may be of very short duration.

Estimates of Relative Risk and Infectivity Rates

(Note: Numbers at the top of columns refer to studies researchers listed below the table.)

Studies/Researchers	1	2	3	4	5	6	7	8	9	10	11
	Relative Risk						Infectivity Rates				
Sharing needles	9	15	9				.0067	.0029			
Anal receptive intercourse	9	10		15	4.2			.006	.005-.01	.1-.3* .001-.01** .005-.01***	
Vaginal receptive intercourse	3	3	3	3	3		.0022	.004			.002
Giving fellatio	1	.02						.0001			
Giving cunnilingus	1	.01						.0001			
Giving cunnilingus /menses	2	.02						.0001			
Anal insertive intercourse								.002			
Vaginal insertive intercourse	.3	1.5						.002			
Vaginal insertive intercourse /menses		2						.002			
Receiving fellatio	1	.001						0			
Receiving cunnilingus	1	.002						0			
Frottage	.5	.001						0			
Frottage /menses	1	.002						0			
Sex toys/ digital sex	.01	.01						0			
"Blood to blood"	.5										

* Depending on viremia.

1. Nancy Padian, UCSF "Male-to-Female Transmission of Human Immunodeficiency Virus", *JAMA* August 14, 1987; personal communications.
2. David Sokel, Family Health International, AIDSCAP Department, personal communications.

3. Edward Kaplan and Robert Heimer, (Yale University) "A Model-Based Estimate of HIV Infectivity via Needle Sharing". *Journal of Acquired Immune Deficiency Syndromes*, 5:1116-1118, 1992. "Evaluating a Needle Exchange Program in a Small City: Models for Testing HIV-1 Risk Reduction" Private paper.
4. "European Study Group on Heterosexual Transmission of HIV: Comparison of Female to Male and Male to Female Transmission of HIV in 563 Stable Couples" *British Medical Journal*, 304:809-813, 1992.
5. Alberto Saracco, et al. "Man-To-Woman Sexual Transmission of HIV: Longitudinal Study of 343 Steady Partners of Infected Men" *Journal of Acquired Immune Deficiency Syndromes*, 6:497-502, 1993.
6. A. Nicolosi et al. "The Efficiency of Male-to-Female and Female-to-Male Sexual Transmission of the Human Immunodeficiency Virus: a Study of 730 Stable Couples" Italian Study Group on HIV Heterosexual Transmission, *Epidemiology*, 6:570-575 November 5, 1994.
7. Edward Kaplan and Robert Heimer, (Yale University) "A Model-Based Estimate of HIV Infectivity via Needle Sharing". *Journal of Acquired Immune Deficiency Syndromes*, 5:1116-1118, 1992. "Evaluating a Needle Exchange Program in a Small City: Models for Testing HIV-1 Risk Reduction"
8. James Kahn, "Are NEPs Cost-effective in Preventing HIV Infection?" In Laurie P, Reingold AL, eds. *The Public Health Impact of Needle Exchange Programs in the United States and Abroad*; Report prepared for the Centers for Disease Control and Prevention. School of Public Health, University of California, Berkeley and Institute for Health Policy Studies, University of California, San Francisco, 1993; private communications.
9. Victor DeGruttola et al. "Infectiousness of HIV between Male Homosexual Partners" *Journal of Clinical Epidemiology*.
10. John Jacquez, et al. "Role of the Primary Infection in Epidemics of HIV Infection in Gay Cohorts" *Journal of Acquired Immune Deficiency Syndromes*, 7:1169-1184, 1994.
11. Norman Huston and Stephen Hulley, "Preventing the Heterosexual Spread of AIDS; Are We Giving Our Patients the Best Advice?" JAMA April 22-29, 1988.

APPENDIX C

ESTIMATES OF THE FREQUENCY AND RELATIVE RISK OF BEHAVIORS AMONG TRANSGENDER PERSONS

Transgender is a term that refers to persons whose gender identity is different than the anatomical sex they were born with. Transgender is also an umbrella term used to describe different types of gender identities and gender expressions (roles). There are male-to-female (MTF) and female-to-male (FTM) transgendered persons (Whitlock, *Transgender Outlook*, 1995). Gender identity is defined to mean a person's various individual attributes as they are understood to be masculine and/or feminine (San Francisco City Attorney's Office, *Legislative Digest of the Gender Identity Discrimination Ordinance*, 1994).

Many transgendered persons live in the gender in which they are most comfortable on a "24/7" (24 hours a day, seven days a week) basis but choose not to undergo gender confirmation surgery (GCS) to alter their genitalia. For those persons seeking surgery there are several options available. Those that alter the breasts (breast enhancement or mastecomy) generally do not alter HIV risk and are not included in this discussion of pre-operative or post-operative status. The surgeries of consideration include vaginalplasty (MTF), and testicular implants, phalloplasty, and genitalplasty (FTM). For more information, please refer to Lou Sullivan's *Information for the Female-to-Male Cross Dresser and Transsexual*; Kiki Whitlock's *Transgender Outlook*; Harry Benjamin's *Standards of Care*; and Gianna Israel's *Recommended Guidelines for Transgender Care*.

To aid those less familiar with transgender issues, the following chart lists pre- and post- operative FTM and MTF and indicates whether each risk act is possible. The actual practice of the act depends on personal preference and sexual orientation.

Risk Act Potential among Transgender FTM and MTF				
Risk Behavior	**FTM No GCS**	**FTM GCS**	**MTF No GCS**	**MTF GCS**
Needle use (Hormones)	yes	yes	yes	yes
Anal receptive intercourse	yes	yes	yes	yes
Anal insertive intercourse	no	yes	yes	no
Vaginal receptive intercourse	yes	no	no	yes
Vaginal insertive intercourse	no	yes	yes	no
Giving fellatio	yes	yes	yes	yes
Receiving fellatio	no	yes	yes	no
Giving cunnilingus	yes	yes	yes	yes
Receiving cunnilingus	yes	no	no	yes
Sharing sex toys/dildos/fingers	yes	yes	yes	yes

Interviews with members of the transgender community and providers serving this population were conducted to identify the ways in which risk for HIV is different for transgender persons. Interviewees described several issues that alter the frequencies of transmission behaviors for transgender persons. The literature on HIV risk and the transgender community was also consulted, although studies mainly focus on transgender sex workers. Issues affecting frequency of risk acts are summarized below.

Frequency of needle-sharing may be higher for members of the transgender community, due to frequent use of hormones by injection. Many transgender persons inject hormones weekly and, according to interviewees, needle-sharing is common. This is in addition to any needle-sharing by injection drug using transgender persons.

There are some considerations about frequency of the various sexual behaviors that can transmit HIV. The behaviors for which transgender persons may show increased or decreased risk for becoming infected are listed below.

- Frequency of unprotected receptive anal intercourse may be higher for pre-operative MTF-IDU, as they are likely to be sex workers and may engage in unprotected sex to earn money. Sex workers are more likely to engage in anal intercourse with clients

than with steady partners (Elifson et al., 1993). This issue is included in the co-factor discussion of commercial sex work.

- Post-operative MTF having sex with men may engage in receptive anal intercourse more frequently than biological females who have sex with men.

- Frequency of vaginal receptive intercourse for post-operative MTF is most likely similar to biological FSM, although some interviewees believe that the act carries a higher relative risk due to less natural lubrication in the vagina, due to the tender tissue during the healing process in the first year after gender confirmation surgery.

- Informants reported that post-operative FTM may have a lower frequency of insertive anal intercourse as well as insertive vaginal intercourse. In addition, the risk to the partner would be lower, as no semen is present.

- The use of sex toys may have higher frequency for pre-operative FTM who have sex with women.

- Frequency of sexual activity in general may be higher for FTM during the first nine months of taking hormones due to an increase in sex drive. This may result in less discretion regarding sex partners and may also reflect in more frequent unprotected, high-risk behavior, such as performing fellatio and receptive anal intercourse.

- Post-operative FTM who have sex with women may perform cunnilingus more frequently than biological MSW.

- Pre- and post-operative FTM who have sex with men may be more likely to engage in receptive anal intercourse than receptive vaginal intercourse.

BIBLIOGRAPHY

Airhihenbuwa CO, DiClemente RJ, Wingood GM, and Lowe A. "HIV/AIDS Education and Prevention Among African-Americans: A Focus on Culture." *AIDS Education and Prevention*, Vol. 4, No. 3, pp. 267-276, 1992.

Allers CT, Benjack KJ, White J, and Rousey JT. "HIV Vulnerability and the Adult Survivor of Childhood Sexual Abuse." *Child Abuse and Neglect*. Vol. 17, pp.291-298, 1993.

Anderson D, et al., "Effects of Disease Stage and Zidovudine Therapy on the Detection of Human Immunodeficiency Virus Type 1 in Semen." *Journal of the American Medical Association*. Vol. 267, No. 20, May 27, 1992.

Anderson JE and Dahlberg LL. "High-Risk Sexual Behavior in the General Population." *Sexually Transmitted Diseases*, Vol. 19, No. 6, pp. 320-325, 1992.

Anderson R and May R. "Epidemiological Parameters of HIV Transmission." *Nature*, Vol. 333, June 9, 1988.

Anderson SC. "Alcoholic Women on Skid Row." *Social Work*, July-August 1987.

Antonucci TC and Jackson JS. "Physical Health and Self-esteem." *Family and Community Health*. August, pp. 1-9, 1983.

Avins AL, Woods WJ, Lindan CP, Hudes ES, Clark W, Hulley SB. "HIV Infection and Risk Behaviors Among Heterosexuals in Alcohol Treatment Programs." *Journal of the American Medical Association*, Vol. 271, No. 7, February 16, 1994.

Babbie E. *The Practice of Social Research* (7th ed.) Belmont, CA: Wadsworth Press, 1995.

Barrett DC, Bolan G, Doll L, Joy D, Counts K and Harrison J. "Coping strategies, substance use, sexual activity and HIV sexual risks in a sample of gay male STD patients." *Journal of Applied Social Psychology*, in press.

Bastani R, and Marcus AC. General population survey of AIDS related attitudes and risk behaviors in California. Submitted to the State of California, Department of Health Services, Office of AIDS, pursuant to contract: 89-97668. Unpublished report, 1991.

Battle RS, Cummings GL, Barker J and Krasnovsky FM. "Accessing an Understudied Population; Behavioral Research within the African American Community." *Journal of Health and Social Policy*, In Press.

Bayer R. "AIDS Prevention and Cultural Sensitivity: Are They Compatible?" *American Journal of Public Health*, Vol. 84, No. 6, 1994.

Becker MH and Joseph JG. "AIDS and Behavioral Change to Reduce Risk: A Review." *American Journal of Public Health*, Vol. 78, No. 4, pp. 394-410, 1988.

Behrendt C, Kendig N, Dambita C, Horman J, Lawlor J, and Vlahov D. "Voluntary Testing for Human Immunodeficiency Virus (HIV) in a Prison Population with High Prevalence of HIV." *American Journal of Epidemiology*. Vol. 139, pp. 918-926, 1994.

Bevier PJ, Chiasson MA, Heffernan RT, Castro KG. "Women At a Sexually Transmitted Disease Clinic Who Reported Same-sex Contact: Their HIV Seroprevalence and Risk Behaviors." *American Journal of Public Health*. Vol. 85, No. 10, pp. 1366-1371, Oct. 1995.

Bhat A, Yee W, and Koo H. "Behind the Asian Mask: A Survey of Asians MSMs and HIV Awareness." Study prepared for Asian Support - AIDS Project Vancouver, 1994.

Binson D, Dolcini M, Pollack LM, and Catania JA. "Multiple Sexual Partners Among Hispanics in High-Risk Cities." *Family Planning Perspectives*, Vol. 25, No. 6, pp. 268-272, 1993.

Bletzer K. "Use of Ethnography in the Evaluation and Targeting of HIV/AIDS Education Among Latino Farm Workers." *AIDS Education and Prevention*, Vol. 7, No. 2, pp. 178-191, 1995.

Bowser BP. "African-American Culture and AIDS Prevention From Barrier to Ally." "Cross-cultural Medicine - A Decade Later," *Western Journal of Medicine*, Vol. 157, pp. 296-289, September 1992.

Boylin L. San Francisco City and County Human Rights Commission, Telephone Interview, 11/17/1995.

Brooks et al., "Repeated Gonorrhea: An Analysis of Importance and Risk Factors." *Journal of Infectious Diseases*, Vol. 137, No. 2, February 1978.

Brown LK, DiClemente RJ, and Beausoleil NI. "Comparison of Human Immunodeficiency Virus Related Knowledge, Attitudes, Intentions and Behaviors Among Sexually Active Abstinent Adolescents." *Journal of Adolescent Health*, Vol. 13, 1992.

Brown LK, DiClemente RJ and Park T. "Predictors of Condom Use in Sexually Active Adolescents." *Journal of Adolescent Health*, Vol. 13, pp. 651-657, 1992.

California Bureau of Criminal Statistics. "California Criminal Justice Profile 1993: San Francisco County." California Department of Justice, Division of Law Enforcement, Law Enforcement Information Center.

California Community Planning Working Group/Office of AIDS. California HIV Prevention Plan. Prepared by Harder+Company Community Research, 1995.

California Department of Health Services-Office of AIDS. "Self-esteem & HIV Risk Taking." *HIV Counselor Perspectives*, Vol. 4 No. 2, March 1995.

Calzavara LM, Coates RA, Rabound JM, Farewell, VT. "Ongoing High-Risk Sexual Behaviors in Relation to Recreational Drug Use in Sexual Encounters: Analysis of 5 Years of Data from the Toronto Sexual Contact Study." *Annals of Epidemiology,* Vol. 3, No. 3, pp. 272-280. May 1993.

Catania J, Coates TJ, Stall R, Bye L, Kegeles S, Capell F, Henne J, McKusick L, Morin S, Turner H, and Pollack L. "Changes in Condom Use among Homosexual Men in San Francisco." *Health Psychology*, Vol.10, pp. 190-199, 1991.

Catania JA et al., "A Test of the AIDS Risk Reduction Model: Psychosocial Correlates of Condom Use in the AMEN Cohort Study." *Health Psychology*, Vol. 13, No. 6, pp. 548-555, 1994.

Caudle P. "Providing Culturally Sensitive Health Care to Hispanic Clients." Journal Title Unknown . Vol. 18. No. 12, December 1993.

Centers for Disease Control and Prevention. "HIV Prevention in the U.S. Correctional System, 1991." *MMWR*, Vol. 41, pp. 389-391, 397, 1992.

Chavez, Lorenze. "Is AIDS Health Care Failing for People of Color?" *Positively Aware*, March/April, 1995.

Choi KH, et al., "AIDS Risk, Dual Identity, and Community Response Among Gay Asian and Pacific Islander Men in San Francisco." In *AIDS Identity, and Community: The HIV Epidemic and Lesbians and Gay Men Psychological Perspectives on Lesbian and Gay Issues*, Vol. 2. Herek G and Greene B (ed.) Sage Publications.

Clements K, Seeman M, Garcia D, and Gleghorn A. "HIV Risk among Homeless Youth: Implications for Gender-specific Prevention." San Francisco Department of Public Health, AIDS Office, 1995.

Cochran SD, et al., "Sexual Practices of Heterosexual Asian-American Young Adults: Implications for Risk of HIV Infection."*Archives of Sexual Behavior*, Vol. 20, No. 4, pp. 333-436. August 1991.

Coleman D. "AIDS and HIV Resources for the Illiterate." *Nursing*, November 1993.

Comprehensive Housing Affordability Strategy (CHAS). "Community Profile Five Year Strategy: 1994-1998 and Plan for 1994." City and County of San Francisco, Mayor's Office of Housing.

Cournos F, Empfield M, and Horwath E. "HIV Seroprevalence Among Patients Admitted to Two Psychiatric Hospitals." *American Journal of Psychiatry*, Vol. 148, pp. 1225-1230, 1991.

Crawford I, Thomas S, and Zoller D. "Communication and Level of AIDS Knowledge Among Homeless African-American Mothers and Their Children." *Journal of Health and Social Policy*, Vol. 4, No. 4, 1993.

Cunningham RM, et al., "The Association of Physical and Sexual Abuse With HIV Risk Behaviors in Adolescence and Young Adulthood: Implications for Public Health." *Child Abuse and Neglect*, Vol. 18, No. 3, pp. 233-245, 1994.

Davidson S, Dew MA, Penkower L, et al., "Substance Use and Sexual Behavior Among Homosexual Men at Risk for HIV Infection: Psychosocial Moderators." *Psychology and Health,* Vol. 7, pp. 259-272, 1992.

Day NE, Houston-Hamilton A, et al. "A report on the first tracking survey of AIDS knowledge, attitudes, and behaviors in San Francisco's Black communities 1988-1989." Conducted for the AIDS Surveillance Office San Francisco Department of Public Health. Unpublished report.

DeGruttola V, Seage GR, Mayer KH, Horsburgh CR. "Infectiousness of HIV Between Male Homosexual Partners." *Journal of Clinical Epidemiology*, 1989.

Des Jarlais D, Friendam S. "HIV Infection Among Intravenous Drug Users: Epidemiology and Risk Reduction." *AIDS*, Vol. 1, pp. 67-76, 1987.

De Wit JBF, vanGriensven GJP. "Time From Safer to Unsafe Sexual Behavior Among Homosexual Men." *AIDS*. No. 8, pp. 123-126, 1994.

Diaz RM. "Latino Gay Men and the Psychosocial Barriers to AIDS Prevention." Stanford University, School of Education and the Center for AIDS Prevention Studies, UCSF. No Date.

DiClemente RJ. "Predictors of HIV-Preventive Sexual Behavior in a High-Risk Adolescent Population: The Influence of Perceived Norms and Sexual Communication in Incarcerated Adolescents on Consistent Use of Condoms." *Journal of Adolescent Health*, Vol. 12, No. 5, 1991.

DiClemente RJ, Durbin M, Siegal D, Kranovsky K, Lazarus N and Comacho T. "Determinants of Condom Use Among Junior High School Students in a Minority, Inner-city School District." *Pediatrics*, Vol. 89, No. 2, 1992.

DiClemente RJ. "Confronting the Challenge of AIDS in the African-American Community." *Ethnicity & Disease*, Vol. 2, Fall, 1992.

DiClemente RJ. "Psychosocial Determinants of Condom Use Among Adolescents." In *Adolescents and AIDS: A Generation In Jeopardy*, R.J. DiClemente (ed.), Sage Publications, Newbury Park, CA, 1992.

Dorfman LE, Derish PA, and Cohen JB. "Hey Girlfriend: An Evaluation of AIDS Prevention among Women in the Sex Industry." *Health Education Quarterly*, Vol. 19, No. 1, pp. 25-40, 1992.

DuRant R, Ashworth C, Newman C, Mcgill L, Rabun C, and Baranowski T. "AIDS/HIV Knowledge Level and Perceived Chance of Having HIV Among Rural Adolescents." *Journal of Adolescent Health*, Vol. 13, pp. 499-505, 1992.

Durbin M, DiClemente RJ, Siegel D, Kranovsky F, Lazarus N and Camacho T. "Factors Associated with Multiple Sex Partners Among Junior High School Students." *Journal of Adolescent Health*, Vol. 14, 1993.

Edlin B, Irwin K, Ludwig D, McCoy H, Serrano Y, Word C, Bowser B, Faruque S, McCoy B, Schilling R, Homberg S, and The Multicenter Crack Cocaine and HIV Infection Study Team. "High-Risk Sex Behavior Among Young Street-Recruited Crack Cocaine Smokers in Three American Cities: An Interim Report." *Journal of Psychoactive Drugs*, Vol. 24, No. 4, pp. 363-371, Oct.-Dec 1992.

Edlin BR, Irwin K, Serrano Y, Evans P, McCoy C. "The impact of cocaine smoking on injection practices of street-recruited drug injectors." The Multicenter Crack Cocaine and HIV Infection Study Team, CDC. The International Conference on AIDS. Meeting abstract, 1993.

Ekstrand ML and Coates TJ. "Maintenance of Safer Sexual Behaviors and Predictors of Risky Sex: The San Francisco Men's Health Study." *American Journal of Public Health*, Vol. 80, No. 8, 1990.

El-Bassel N and Schilling RF. "Social Support and Sexual Risk Taking Among Women on Methadone." *AIDS Education and Prevention*, Vol. 6, No. 6, 506-513, 1994.

Elifson, KW, Boles, J, Posey, E, Seat, M, Barrow, W, Elsea W. "Male Transvestite Prostitutes and HIV Risk." *American Journal of Public Health*, Vol. 83, No. 2, 1993.

Fairbank, Bregman, & Maullin Inc. " A Survey of AIDS Knowledge, Attitudes, and Behaviors in San Francisco's American-Indian, Filipino, and Latino Gay and Bisexual Male Communities." Prepared for the San Francisco Department of Pubic Health, AIDS Office, May 15, 1991.

Fetter MS and Larson E. "Preventing and Treating Human Immunodeficiency Virus Infection in the Homeless." *Archives of Psychiatric Nursing*, Vol. 4, No. 6, pp. 379-383, 1990.

Fish LJ, Devellis BM, and Cohn SE. "Differences in Social Support and Coping Among HIV- infected Men and Women." No Date.

Fisher B, Hovell M, Hofstetter CR, and Houghm R. "Risks Associated With Long-Term Homelessness Among Women: Battery, Rape and HIV Infection." *International Journal of Health Services*, Vol. 25, No. 2, pp. 351-369, 1995.

Fisher DG, Cagle HH, Wilson PJ. "HIV risk behavior of Alaska Native drug users." Center for Alcohol and Addiction Studies, University of Alaska, Anchorage. Meeting abstract, 1993.

Fisher DG, DeLapp TD, Roggenbuck RL, Brause J. "Substance Use and Perceived AIDS Exposure Among Homosexual Men in Alaska." *Psychology of Addictive Behaviors*. Vol. 6, No. 3, pp. 168-174, 1992.

Flournoy M. Prevention Director, San Francisco AIDS Foundation. Telephone interview, 1/26/95.

Folkman S, et al., "Stress, Coping, and High-Risk Sexual Behavior." *Health Psychology*, Vol. 11, No. 4, pp. 218-222, 1992.

Ford K, Rubinstein S and Norris A. "Sexual Behavior and Condom Use Among Urban, Low Income, African-American and Hispanic Youth." *AIDS Education and Prevention*, Vol. 6, No. 3, pp. 219-229, 1994.

Forrest K, Austin DM, Valdes MI, Fuentes EG, and Wilson SR. "Exploring Norms and Beliefs Related to AIDS Prevention Among California Hispanic Men." *Family Planning Perspectives*, Vol.25, No. 3, pp. 111-117, May/June 1993.

Freeman RC, Rodriguez GM, French JF. "A comparison of Male and Female Intravenous Drug Users' Risk Behaviors for HIV Infection." *American Journal of Drug and Alcohol Abuse*, 20(2); 129-157, 1994.

Fullilove M, Golden E, Fullilove R, Lennon R, Porterfield D, Schwarcz S, Bolan G. "Crack Cocaine Use and High-Risk Behaviors Among Sexually Active Black Adolescents." *Journal of Adolescent Health*, Vol. 14, pp. 295-300, 1993.

Fullilove RE, Fullilove M, Bowser BP and Gross SA. "Risk of Sexually Transmitted Disease Among Black Adolescent Crack Users in Oakland & San Francisco, CA." *Journal of the American Medical Association*, Vol. 263, No. 6, pp. 851-855, 1990a.

Fullilove RE, Thompson-Fullilove M, Bowser B and Gross S. "Crack Users: The New AIDS Risk Group?" *Cancer Detection and Prevention*, Vol. 14, pp. 363-368, 1990b.

Gans AA. "HIV/AIDS and safer sex survey of gay and bisexual men." HIV/AIDS Program, Santa Clara County Health Department. Unpublished manuscript, 1993.

Gelberg L and Linn IS. "Social and Physical Health of Homeless Adults Previously Treated for Mental Health Problems." *Hospital and Community Psychiatry*, Vol. 39, pp. 510-516, 1988.

Gellert GA, Maxwell RM, Higgins KV, Pendergas T & Willker N. "HIV Infection in the Women's Jail, Orange County California, 1985-1991." *Journal of Public Health*. Vol. 83, No. 10, pp. 1454-1456, 1993.

Grant R, Wiley J, Winkelstein W. "Concise Communications." *Journal of Infectious Diseases*, Vol. 156, No. 1, pp. 189-193, July 1987.

Greenberg J, Magder L, and Aral S. "Age at First Coitus: A Marker for Risky Sexual Behavior in Women." *Sexually Transmitted Diseases*, November-December 1992.

Haan M, Kaplan GA, Camacho T. "Poverty and Health: Prospective Evidence From the Alameda County Study." *American Journal of Epidemiology*, Vol. 125, pp. 989-998, 1987.

Hagan H, Des Jarlais DC, Purchase D, Reid T, Friedman SR. "The Tacoma syringe exchange." *Journal of Addiction Disease*, (10) 81-8, 1991.

Hagen JL and Ivanoff AM. "Homeless Women: A High-Risk Population." *Affilia*, Spring 1988.

Haverkos HW, Battjes R. "Female-to-Male Transmission of HIV." (Letter to the Editor) *Journal of the American Medical Association*, Vol. 268, No. 14, October 14, 1992.

Haverkos HW, Dougherty J. "Health Hazards of Nitrite Inhalants." *American Journal of Medicine*, Vol. 84, pp. 479-482, March 1988.

Haverkos HW, Kopstein AN, Wilson H, Drotman P. "Nitrite Inhalants: History, Epidemiology, and Possible Links to AIDS." *Environmental Health Perspectives*, Vol. 102, No. 10, pp. 858-861, 1994.

Hays R, Kegeles S and Coates T. "High HIV Risk-Taking Among Young Gay Men." *AIDS*, Vol. 4, pp. 901-907, 1990.

Health Initiatives for Youth. "Psychosocial Challenges of HIV-Affected Youth."*Bridges* June/July 1995.

Hearst N, Hulley S. "Preventing the Heterosexual Spread of AIDS." *Journal of the American Medical Association*, Vol. 259, No. 16, April 22-29, 1988.

Hein K, Dell R, Futterman D, Rotheram-Borus MJ, and Shaffer N. "Comparison of HIV+ and HIV- Adolescents: Risk Factors and Psychosocial Determinants." *Pediatrics*, Vol. 95, No. 1, January 1995.

Herek GM, Cogan, J, and Communication Technologies. San Francisco: Public Media Center in Association with the Ford Foundation and Joyce Mertz-Gilmore Foundation. "AIDS and Stigma: A Review of the Scientific Literature." 1995.

Hindin R, Bigelow C, Vickers-Lahti M, Lewis B, McCusker J. "Gender differences in sharing behavior among intravenous drug users." University of Massachusetts — Amherst, School of Public Health. International Conference on AIDS. Meeting abstract, 1992.

Hobfoll S. "Personal and Social Resources and the Ecology of Stress Resistance." *Review of Personality and Social Psychology* Vol. 6, pp. 265 - 290 Beverly Hills, CA Sage, 1985.

Hobfoll S, and Lerman, M. "Personal Relationships, Personal Attributes, and Stress Resistance: Mothers Reactions to Their Child's Illness," *American Journal of Community Psychology*,Vol. 16, pp. 565-589, 1988.

Horsburgh CR, Jarvis JQ, McArthur T, Ignacio T and Stock P. "Seroconversion to Human Immunodeficiency Virus in Prison Inmates." *American Journal of Public Health*. Vol. 80, No. 2, pp. 209-210, 1990.

Israel G and Tarver D. *Recommended Guidelines for Transgender Care*; American Educational Gender Information Service (AEGIS) and Sullivan Press, 1995.

Jackson L, Highcrest A, and Coates RA. "Varied Potential Risks of HIV Infection Among Prostitutes." *Social Science and Medicine*, Vol. 35, No. 3, pp. 281-286.

Jacquez J, et al., "Role of the Primary Infection in Epidemics of HIV Infection in Gay Cohorts." Journal of Acquired Immune Deficiency Syndromes, Vol. 7, pp. 1169-1184, 1994.

Jemmott JB, Jemmott, LS and Fong GT. "Reductions In HIV Risk-Associated Sexual Behaviors Among Black Male Adolescents: Effects of an AIDS Prevention Intervention." *American Journal of Public Health*, Vol. 82, No. 3, 1992.

Johnson AK and Krueger LW. "Toward a Better Understanding of Homeless Women." *Social Work*, November 1989.

Kahn JG. "Are NEPs Cost-effective in Preventing HIV Infection?" In Lurie P. Reingold AL, (eds). *The Public Health Impact of Needle Exchange Programs in the United States and Abroad*. Report prepared for the Centers for Disease Control and Prevention, School of Public Health, University of California, Berkeley and Institute for Health Policy Studies, University of California, San Francisco, 1993.

Kaplan E. "Modeling HIV Infectivity: Must Sex Acts be Counted?." *Journal of Acquired Immune Deficiency Syndromes*, Vol. 3, No. 1, 1990.

Kaplan E, Heimer R. "A Model-Based Estimate of HIV Infectivity via Needle Sharing." *Journal of Acquired Immune Deficiency Syndromes*, Vol. 5, pp. 1116-1118.

Karim QA, Karim SSA, Soldan K, and Zondi M. "Reducing the Risk of HIV Infection Among South African Sex Workers: Socioeconomic and Gender Barriers." *American Journal of Public Health*, Vol. 85, No. 11, pp. 1521-1525, 1995.

Kelly JA, St. Lawrence JS, Betts R, Brasfield TL, and Hood, HV. "A Skills-training Group Intervention Model to Assist Persons in Reducing Risk Behaviors for HIV Infection." *AIDS Education and Prevention*, Vol. 2, No. 1, 1990.

Kelly JA, Murphy, DA, Sikkema KJ, and Kalichman, SC. "Psychological Interventions to Prevent HIV Infection Are Urgently Needed: New Priorities for Behavioral Research in the Second Decade of AIDS." *American Psychologist*, Vol. 8, No. 10, 1993.

Kennedy MR. "Homeless and Runaway Youth Mental Health Issues: No Access to the System." *Journal of Adolescent Health*, Vol. 12, pp. 576-579, 1991.

Kennedy M, and Van Houten C. "Providing AIDS-Related Services to Recently Arrived Immigrant and Refugee Youth." *AIDS Education and Prevention*, Supplement: pp. 83-93, Fall 1993.

Kline, et al., "Minority Women and Sexual Choice in the Age of AIDS." *Social Science Medicine*, Vol. 34, No. 4, pp. 447-457, 1992.

Kobasa SC, Maddi SR, Puccetti MC, and Zola, M. "Effectiveness of Hardiness, Exercise and Social Support as Resources Against Illness." *Journal of Psychosomatic Research*, Vol. 29, pp. 525-533, 1985.

Koegel P."Ethnographic Perspectives on Homeless and Homeless Mentally Ill Women." Prepared for the National Institute of Mental Health: Rockville, MD. April 1987.

Koegel P, Burnam A, Farr RK. "The Prevalence of Specific Psychiatric Disorders Among Homeless Individuals in the Inner City of Los Angeles." *Archives of General Psychiatry*, Vol. 45, pp. 1085-1092, 1988.

Krueger LE, Wood RW, Diehr PH , and Maxwell CL. "Poverty and HIV Seropositivity: The Poor are More Likely to be Infected." *AIDS*, Vol. 4, No. 8, 1990.

Latkin C, Mandell W, Vlahov D, et al. "My place, your place, and no place: behavior setting as a risk factor for HIV-relationed injection practices of drug users in Baltimore, Maryland." *American Journal of Community Psychology*, 22(3)415-30, 1994.

Laumann E, Gagnon J, Michael R, and Michaels S. "The Social Organization of Sexuality: Sexual Practices in the United States." *The University of Chicago Press*, Chicago, IL, 1994.

Leigh BC, Temple MT, and Trocki KF. "The sexual behavior of US adults: Results from a national survey." *American Journal of Public Health*, 83(10):1400-1408, 1993.

LeMaster Pl And Connell CM. "Health Education Interventions Among Native Americans: A Review and Analysis." *Health Education Quarterly*, Vol. 21, No. 4, pp. 521-538, 1994.

Lemp GF, Hirozawa AM, Givertz D, Nieri GN, Anderson L, Lindegren ML, Janssen RS, Katz M. "Seroprevalence of HIV and Risk Behaviors Among Young Homosexual and Bisexual Men." *JAMA*. Vol. 272, No. 6, pp. 449-454, 1994.

Lewis DK and Watters JK. "Sexual behavior and sexual identity in male injection drug users." *Journal of Acquired Immune Deficiency Syndromes*, 7:190-198, 1994.

Lezak AD. "Annotated Bibliography of Literature on Homeless Women Who Are Mentally Ill and/or Have Alcohol Abuse Problems." Prepared for the National Institute of Mental Health and the National Institute on Alcohol Abuse and Alcoholism: Rockville, MD. June, 1988.

Linn IS, Gelberg L and Leake B. "Substance Abuse and Mental Health Status of Homeless and Domiciled Low-income Users of a Medical Clinic." *Hospital and Community Psychiatry*, Vol. 41, pp. 306-310, 1990.

Lockett G. Executive Director, California Prostitute Education Program (Cal-PEP). Telephone interview, 12/7/95.

Lodico MA and DiClemente RJ. "The Association Between Childhood Sexual Abuse and Prevalence of HIV-Risk Behaviors." *Clinical Pediatrics*, August 1994.

Longshore D, Hsieh S, Danila B, and Anglin D. "Methodone Maintenance and Needle/Syringe Sharing." *The International Journal of Addictions*, 28(10),983-996, 1993.

McCusker J, Stoddard AM, McDonald M, Zapka JG, Mayer KH. "Maintenance of Behavior Change in a Cohort of Homosexually Active Men." *AIDS*, Vol. 6,, pp. 861-868., 1992.

McKeganey, Neil. "Prostitution and HIV: What Do We Know and Where Might Research be Targeted in the Future?" *AIDS*, Vol. 8, pp. 1215-1226, 1994.

McKirnan D, Stokes J, Vanable P, Buraette R Doll L. "Predictors of Unsafe Sex among Bisexual Men: The Role of Gay Identification." Poster, Berlin International AIDS Conference, 1993.

Magura S, Kang SY, Shapiro J and O'Day J. "HIV Risk Among Women Injecting Drug Users Who Are In Jail." *Addiction*. Vol. 88, pp. 1351-1360, 1993.

Mann J, et al., "HIV Infection and Associated Risk Factors in Female Prostitutes in Knishasa, Zaire." *AIDS*, Vol. 2, No. 4, 1988.

Marin BV and Gomez CA. "Latinos, HIV Disease and Culture: Strategies for AIDS Prevention." University of California at San Francisco, Center for AIDS Prevention Studies, 1993.

Maxwell AE, Bastani R, and Yan KX. "AIDS Risk Behaviors and Correlates in Teenagers Attending Sexually Transmitted Disease Clinics in Los Angeles." *Genitourinary Medicine*, Vol. 71, pp. 82-87, 1995.

Mayer, KH and Anderson DJ. "Heterosexual Transmission of HIV." in *HIV Infection in Women*, ed. H Minkoff, JA DeHovitz, A Duerr NY: Raven Press, 1995.

Mayer, KH and DeGruttola. "Human Immunodeficiency Virus and Oral Intercourse." (Letter to the Editor) *Annals of Internal Medicine*, Vol. 107, No. 3.

Mays VM and Cochran SD. "Issues in the Perception of AIDS Risk and Risk Reduction Activities by Black and Hispanic/Latina Women." *American Psychologist*, Vol. 43, No. 11, pp. 949-957, November 1988.

Meinhardt K, Spitznagel E, and Jerrell J. "California Mental Health Needs Met By Local and State Hospital Services." Developed under contract by the Santa Clara County Services Research Center for the California Department of Mental Health. November, 1990.

Mirvish SS, Wiliamson J, Babcook D, Chen S. "Mutagenicity of Iso-Butyl Nitrite Vapor in the Ames Test and Some Relevant Chemical Properties, Including the Reaction of Iso-Butyl Nitrite with Phosphate." *Environmental and Molecular Mutagenesis*, Vol. 21, pp. 247-252, 1993.

Moss AR, Osmond D, Bacchetti P, Chermann J, Barre-Sinoussi F, Carlson J. "Risk Factors for AIDS and HIV Seropositivity in Homosexual Men." *American Journal of Epidemiology*, Vol. 125, No. 6, pp. 1035-1046, 1987.

Muhlenkamp A and Sayles J. "Self-esteem, Social Support and Positive Health Practices." *Nursing Research*, Vol. 35, pp. 334-338, 1986.

Multicultural Liaison Board/California State Office of AIDS. "Frameworks for Change." 1994.

Myers T, Souza T, Gardner L, Sin E. "A Needs Assessment of the Sexual Behaviors and Attitudes of Gay Asian Men." No Date.

Nakajima GA, Chan YH, and Lee K. "Mental Health Issues for Gay and Lesbian Asian Americans." *Homosexuality and Mental Health: A Comprehensive Textbook*. ed. Cabaj R, and Stein T. In Press.

National Commission on AIDS. *HIV Disease in Correctional Facilities*, Washington, D.C., 1991.

Nelson KE, Vlahov D, Cohn S, Odunmbaku M, Lindsay A, Anthony JC and Hook III EW. "Sexually Transmitted Disease in a Population of Intravenous Drug Users: Association With Seropositivity to the Human Immunodeficiency Virus (HIV)." *Journal of Infectious Diseases*. Vol. 164, pp. 457-463, 1991.

Nemoto T, Guydish J, Chan M, and Werdegar D. "Effect of Social Support on HIV-related Sexual Risk Behaviors Among Drug Users." Presented at APHA 121st Annual Meeting, Oct. 1993 in San Francisco, CA.

Nyamathi AM. "Comparative Study of Factors Relating to HIV Risk Level of Black Homeless Women." *Journal of Acquired Immune Deficiency Syndromes*, Vol. 5, pp. 222-228, 1992.

Nyamathi AM. "Relationship of Resources to Emotional Distress, Somatic Complaints, and High-Risk Behaviors in Drug Recovery and Homeless Minority Women." *Research In Nursing and Health*, Vol. 14, pp. 269-277, 1991.

Nyamathi AM. "AIDS-Related Knowledge, Perceptions, and Behaviors among Impoverished Minority Women." *American Journal of Public Health,* Vol. 83, No. 1, pp. 65-71, January, 1993a.

Nyamathi AM. "Outcomes of Specialized and Traditional AIDS Counseling Programs for Impoverished Women of Color." *Research in Nursing and Health*, Vol. 16, pp. 11-21, 1993b.

O'Campo P, Deboer M, Faden RR, Kass N, Gielen AC & Anderson J. "Prior Episode of Sexually Transmitted Disease and Subsequent Sexual Risk-reduction Practices: A Need for Improved Risk-reduction Interventions." *Sexually Transmitted Diseases*. Vol. 19, No. 6, pp. 326-330, 1992.

O'Donnell L, SanDoval A, Vornfett R and O'Donnell CR. "AIDS/STD Prevention and the Challenge of Gender and Cultural Diversity: Knowledge, Attitudes, and Risk Behaviors Among Black and Hispanic Inner-City STD Clinic Patients." *Sexually Transmitted Diseases*, May-June 1994.

Office on AIDS, National Institute of Mental Health, National Institutes of Health, and NIMH Consortium on HIV Prevention Research. "AIDS Prevention Strategies that Work: A Review of NIMH-Sponsored Research."

Onorato IM, Gwinn M, and Dondero T. "Applications of Data from CDC Family of Surveys." *Public Health Reports*, Vol. 109, No. 2, pp. 240-211, March-April 1994.

Onorato IM, Klaskala W, Morgan WM, and Withum D. "Prevalence, Incidence, and Risks for HIV-1 Infection in Female Sex Workers in Miami, Florida." *Journal of Acquired Immune Deficiency Syndromes and Retrovirology*, Vol. 9, pp. 395-400, 1995.

Osella A, Nicolosi A, Correa Leite ML, Velati C, et al. "Determinants of syringe sharing in HIV-negative intravenous drug users." International Conference on AIDS. Meeting abstract, 1993.

Osmond DH, Page K, Wiley J, Garrett K, et al. "HIV infection in homosexual and bisexual men 18-29 years of age: the San Francisco Young Men's Health Study." *American Journal of Public Health*, 84(12):1933-7, 1994.

Ostrow DG, DiFranceisco WJ, Chmiel JS, Wagstaff DA, Wesch J. "A Case-Control Study of Human Immunodeficiency Virus Type 1 Seroconversion and Risk-Related Behaviors in the Chicago MACS/CCS Cohort, 1984-1992." *American Journal of Epidemiology*, Vol. 142, No. 8, pp. 875-995, 1995.

Ostrow DG, VanRaden MJ, Fox R, Kingsley LA, Dudley J, Kaslow RA. "The Multicenter AIDS Cohort Study (MACS)." *AIDS*, Vol. 4, pp. 759-765, 1993.

Padian N, Marquis L, Francis DP, Anderson RE, Rutherford GW, O'Malley PM, Winkelstein W. "Male-to-Female Transmission of Human Immunodeficiency Virus." *Journal of American Medical Association*, Vol. 258, pp. 788-790, 1987.

Pappas L. Managing Director, Educational Message Services and Co-Chair, Board of Directors for Tenderloin AIDS Resource Center. Telephone interview, 11/17/95.

Paringer L, Phillips K, Hu T. "Who Seeks HIV Testing? The Impact of Risk, Knowledge, and State Regulatory Policy on the Testing Decision." *Inquiry*, Vol. 28, pp. 226-235, 1991.

Paul JP, Stall R, and Davis F. "Sexual Risk for HIV Transmission Among Gay/Bisexual Men in SubstanceAbuse Treatment." *AIDS Education and Prevention*, 5:11-24, 1993.

Paul JP, Stall RD, Crosby GM, Barrett DC, Midanik LT. "Correlates of Sexual Risk-Taking among Gay Male Substance Abusers." *Addiction*, Vol. 89, pp. 971-983, 1994.

Pearce DM. "Keys to New Lives: A Report and Evaluation on Seven Transitional Housing Programs." Prepared for the Women and Poverty Project: Washington, DC. September 1990.

Penkower L, Dew MA, Kingsley L, Becker JT, Satz P, Schaerf FW, Sheridan K. "Behavior, Health and Psychosocial Factors and Risk for HIV Infection Among Sexually Active Homosexual Men: The Multicenter AIDS Cohort Study." *American Journal of Public Health*. Vol. 81, No. 2, pp. 194-196, 1991.

Pepin J et al., "The Interaction of HIV Infection and Other Sexually Transmitted Diseases: an Opportunity for Intervention." *AIDS*, Vol. 3, pp. 3-9, 1989.

Perkins DO, Leserman J, Murphy C, and Evan D. "Psychosocial Predictors of High-Risk Sexual Behavior Among HIV-Negative Homosexual Men." *AIDS Education and Prevention*, Vol. 5, No. 2, pp. 141-152, 1993.

Peterson JL, Coates TO, Catania JA, Billiard B, Middleton L and Hearst N. "Help-Seeking for AIDS High-Risk Sexual Behaviors Among Gay and Bisexual African American Men." *AIDS Education and Prevention*. Vol. 7, No. 1, pp. 1-9, 1995.

Peterson JL, Coates TJ, Catania JA, Middleton L, Hilliard B, and Hearst N. "High-risk sexual behavior and condom use among gay and bisexual African-American men." *American Journal of Public Health*, 82(11):1490-4, 1992.

Petosa R and Jackson K. "Using the Health Belief Model to Predict Safer Sex Intentions Among Adolescents." *Health Education Quarterly*, Vol. 18, No. 4, pp. 463-476, 1991.

Plummer FA, Simonsen JN, Cameron DQ, Ndinya-Achola JO, Kreiss, JK, Gakinya MN, Waiyaki P, Cheang M, Piot P, Ronald AR, Ngugi EN. "Cofactors in Male-Female Sexual Transmission of Human Immunodeficiency Virus Type 1." *Journal of Infectious Diseases*, Vol. 163, pp. 233-239, 1991.

Polonsky S, Kerr S, Harris B, Gaiter J, Kichtner RR & Kennedy MG. "HIV Prevention in Prisons and Jails: Obstacles and Opportunities." *Public Health Reports*. Vol. 109 No. 5 pp. 615-625, 1994.

Public Media Center. *The Impact of Homophobia and Other Social Biases on AIDS*. 1995a.

Public Media Center in Association with the Ford Foundation and Joyce Mertz-Gilmore Foundation. *AIDS Stigma and Discrimination: The Attitudes of National Experts and Influentials*. 1995b.

Quinn S. "Perspective AIDS and the African American Woman: The Triple Burden of Race, Class, and Gender." *Health Education Quarterly*, Vol. 20, No. 3 pp. 305-320, Fall 1993.

Ramirez JS, de la Rosa E, Castro G, Marco A, and Zimmerman M. "AIDS Knowledge and Sexual Behavior Among Mexican Gay and Bisexual Men." *AIDS Education and Prevention*, Vol. 6, No. 2, pp. 163-174, 1994.

Rapkin AJ and Erickson P. "Differences in Knowledge of and Risk Factors for AIDS Between Hispanic and Non-Hispanic Women Attending an Urban Family Planning Clinic." *AIDS*, Vol. 4, pp. 889-899, 1990.

Rickman RL, Lodico R, DiClemente RJ, Morris R, Baker C, and Huscroft S. "Sexual Communication is Associated With Condom Use by Sexually Active Incarcerated Adolescents." *Journal of Adolescent Health*, Vol. 15, 1994.

Rosenfeld S and Lewis D. "The Hidden Effect of Childhood Sexual Abuse on Adolescent and Young Adult HIV Prevention: Rethinking AIDS Education, Program Development and Policy." *AIDS & Public Policy Journal*, Vol. 8, No. 4, Winter 1993.

Rowell R. "Developing AIDS Services for Native Americans: Rural and Urban Contrasts." In Press, January 1995.

Sabogal F, Faigeles B, and Catania J. "Multiple Sexual Partners Among Hispanics in High-Risk Cities." Data from the National AIDS Behavioral Surveys. *Family Planning Perspectives*, Vol. 25, No. 6, November/December 1993.

Sacks MH, Perry S, Graver R. "Self-reported HIV-related Risk Behaviors in Acute Psychiatric Inpatients: A Pilot Study." *Hospital and Community Psychiatry*, Vol. 41, pp. 1253-1255, 1990.

San Francisco City Attorney's Office. *Legislative Digest of the Gender Identity Discrimination Ordinance*, 1994.

San Francisco Department of Public Health AIDS Office. *City Clinic KABB Summary*, 1992.

San Francisco Department of Public Health AIDS Office. "Health Behaviors Among Lesbian and Bisexual Women: A Community-based Women's Health Survey." October 1993.

San Francisco HIV Prevention Planning Council. *San Francisco HIV Prevention Plan*, 1995.

Saracco A, Musicco M, Nicolosi A, Angarano G, Arici C, Gavazzeni G, Costigliola P, Gafa S, Gervasoni C, Luzzati R, Piccinino F, Puppo F, Salassa B, Sinicco A, Stellini R, Tirelli U, Turbessi G, Vigevani GM, Visco G, Zerboni R, Lazzarin A. "Man-to-Woman Sexual Transmission of IV: Longitudinal Study of 343 Steady Partners of Infected Men." *Journal of Acquired Immune Deficience Syndromes,* Vol. 6, pp. 497-502, 1993.

Schleifer S, Delany B, Tross S, Keller S. "AIDS and Addictions." *Clinical Textbook of Addictive Disorders*, Frances and Miller (eds.), Guilford Press, 1991.

Seidman S, and Rieder R. "A review of Sexual Behavior in the United States." *American Journal of Psychiatry*, 151:330-341, 1994.

Shafer MA and Boyer CB. "Psychosocial and Behavioral Factors Associated With the Risk of Sexually Transmitted Diseases, Including HIV Infection, among Urban High School Students." *The Journal of Pediatrics*, Vol. 9, No. 28, November 1991.

Shafer MA, Hilton JF, Ekstrand M, Keough J, Gee L, DiGiorgio-Haag L, Shalwitz J, and Schachter J. "Relationship Between Drug Use and Sexual Behaviors and the Occurrence of Sexually Transmitted Diseases Among High-Risk Male Youth." *Sexually Transmitted Diseases*, November-December 1993.

Shayne, Vivian T. and Kaplan, Barbara J. "Double Victims: Poor Women and AIDS." *Women and Health*, Vol. 17, No. 1, 1991.

Siegal HA, Carlson RG, Falck R, Forney MA, Wang J, and Li L. "High-Risk Behaviors for Transmission of Syphilis and Human Immunodeficiency Virus Among Crack Cocaine-using Women." *Sexually Transmitted Diseases*, September-October 1992.

Siegel K, Mesagno FP, Chen J, Christ G. "Factors Distinguishing Homosexual Males Practicing Risky and Safer Sex." *Social Science Medicine* ,Vol. 28, No. 6, pp. 561-569, 1989.

Singleton JA, Perkins CI, Trachtenberg AI, Hughes MJ, Kizer KW, and Ascher M. "HIV Antibody Seroprevalence Among Prisoners Entering the California Correctional System." *The Western Journal of Medicine*, Vol. 153, pp. 394-399, 1990.

St. Lawrence JS and Brasfield TL. "HIV Risk Behavior Among Homeless Adults." *AIDS Education and Prevention,* Vol. 7 , No.1, pp. 22-31, 1995.

Stall R, Barrett D, Bye L, Catania J, et al. "A comparison of younger and older gay men's HIV risk-taking behaviors: The Communication Technologies 1989 cross-sectional survey." *Journal of Acquired Immune Deficiency Syndromes*, 5:682-687, 1992.

Stall R and Leigh B. "Understanding the Relationship Between Drug or Alcohol Use and High Risk Sexual Activity for Hiv Transmission: Where Do We Go from Here?" *Addiction*, Vol. 89, pp. 131-134, 1994.

Stall R, McKusick L, Wiley J et al. "Alcohol and Drug use During Sexual Activity and Compliance with Safe Sex Guidelines for AIDS: the AIDS Behavioral Research Project." *Health Education Quarterly,* Vol. 13, pp. 359-371, 1986.

Stall R and McKusick L. "The Prevalence of High Risk Sexual Behavior among Heterosexual and Homosexual 'Pick-up' Bar Patrons in San Francisco." IV International Conference on AIDS, Stockholm, June 1988.

Stanton B, Li X, Black M, Ricardo I, et al. "Sexual practices and intentions among preadolescent and early adolescent low-income urban African-Americans." *Pediatrics*, 93(6 Pt 1):966-73, 1994.

Stiffman AR, Dore P, Earls F, and Cunningham R. "The Influence of Mental Health Problems on AIDS-Related Risk Behaviors in Young Adults." *The Journal of Nervous and Mental Disease*, Vol. 180, No. 5, 1992.

Stoner MR. "The Plight of Homeless Women." *Social Service Review*, December 1983.

Sullivan L. *Information for the Female-to-Male Cross Dresser and Transsexual*; Ingersoll Gender Center; Third Edition, October 1990.

Syme SL, Berkman LF. "Social Class, Susceptibility and Sickness." *American Journal of Epidemiology*, Vol. 104, pp. 1-8, 1976.

Thomas SB and Quinn SC. "The Tuskegge Syphilis Study, 1932 to 1972: Implications for HIV Education and AIDS Risk Reduction Programs in the Black Community." *American Journal of Public Health*, Vol. 81, No. 11, pp. 1498-1505, November 1991.

Tynes LL, Sautter FJ, McDermott BE, and Winstead DK. "Risk of HIV Infection in the Homeless and Chronically Mentally Ill." *Southern Medical Journal*, Vol. 86, No. 3, 1993.

U.S. Dept. Of Health and Human Services. "Socioeconomic Factors Influence Access to HIV and AIDS Therapies." *Research Activities*, Number 181, January 1995.

UCSF AIDS Health Project. "Self-Esteem and HIV Risk-Taking." California Department of Health Services, Office of AIDS, March 1995.

Valdiserri RO, Holtgrave DR, and Brackbill RM. "American Adults Knowledge of HIV Testing Availability." *American Journal Of Public Health*, Vol. 83, No. 4, April 1993.

van Griensven GJP, Tielman RAP, Goudsmit J, Van Der Noordaa J, De Wolf F, De Vroome MM, Coutinho RA. "Risk Factors and Prevalence of HIV Antibodies in Homosexual Men in the Netherlands." *American Journal of Epidemiology*, Vol. 125, No. 6, pp. 1048-1057, 1987.

Van Voorhis et al., "Detection of Human Immunodeficiency Virus Type 1 in Semen from Seropositive Men Using Culture and Polymerase Chain Reaction Dexyrobonucleic Acid Amplification Techniques." *Fertitiltiy and Sterility*, Vol. 55, No. 3, March 1991.

Waldorf D and Lauderback D. "Condom Failure among Male Sex Workers in San Francisco." *AIDS and Public Policy Journal*, Vol. 8, No. 2, pp. 79-90, 1993.

Walker P, Berger J, Members of HBIGDA, et al. *Standards of Care*; Harry Benjamin International Gender Dysphoria Association, Inc. (HBIGDA). Revised Draft 1990.

Walter HJ and Vaughan RD. "Psychosocial Problems and Risk Behavior." *Focus*. Vol. 8, No. 9, 1993.

Watters JK. "Trends in risk behavior and HIV seroprevalence in heterosexual injection drug users in San Francisco, 1986-1992." *Journal of Acquired Immune Deficiency Syndrome*, 7(12):1276-81, 1994.

Watters J, Estilo MJ, Clark GL, Lorvick, JL. "Syringe and needle-exchange as HIV/AIDS prevention for injection drug users." *JAMA*, (271):115-20, 1994.

Wells EA, Calsyn DA, Saxon AJ and Greenberg DM. "Using drugs to facilitate sexual behavior is associate with sexual variety among injection drug users." *Journal of Nervous and Mental Disease*, (181)10:626-631, 1993.

Whitlock, K. *Transgender Outlook*. Asian AIDS Project, San Francisco, CA. 1995.

Whitlock K. Asian AIDS Project. Telephone interview, 12/18/95.

Wingood GM and DiClemente RJ. "Cultural, Gender and Psychosocial Influences on HIV-Related Behavior of African-American Female Adolescents: Implications for the Development of Tailored Prevention Programs." *Ethnicity and Disease*, Vol. 2, 1992.

Wolitski R, Humfleet G, Lee J, Corby N. "HIV risk-related practices of male homosexual, bisexual, and heterosexual injection drug users." Psychology Department, California State University, Long Beach. Meeting Abstract, 1992.

Young R, Weissman G, and Cohen J. "Assessing Risk in the Absence of Information: HIV Risk Among Women Injection-Drug users Who Have Sex With Women."

Zierler S, Feingold L, Laufer D, Velentgas P, Kantrowitz-Gordon and Mayer K. "Adult Survivors of Childhood Sexual Abuse and Subsequent Risk of HIV Infection." *American Journal of Public Health*, Vol. 81, No. 5, May 1991.